

LETTERS

Anesthesiologists provide excellent value in colonoscopy

I read with great interest the commentary by Pace and Borgaonkar published in *CMAJ*,¹ and I offer the following observations and comments.

The authors begin by noting that “in many countries, a large proportion of colonoscopies are performed with little or no sedation,” citing a 2011 national audit in the United Kingdom where 10.7% of colonoscopies were performed without sedation, and in only 0.4% was propofol or general anesthesia administered.² The authors did not note that the UK study also reported an assessment of patient comfort as a “key auditable outcome.” This outcome was recorded using the Gloucester Scale, which is a nurse-assessed measure of comfort with a defined five-point scale. The reported incidence of a “comfort score” of 4 or greater (indicating moderate to severe discomfort) was 9.8%, which is almost equivalent to the proportion of colonoscopies performed without sedation. The authors noted that it is unacceptable for such a large proportion of patients to experience substantial distress during their colonoscopy.

Pace and Borgaonkar also noted the reported increase in use of propofol for colonoscopy in Ontario between 2005 and 2012, and correctly identify the major reasons for this as patient preference, endoscopist preference and improved efficiency gained from faster patient recovery. They noted that numerous studies have shown the safety of propofol administration directed by endoscopists and further stated that successful efforts have been made to encourage nonanesthesiologists to administer this drug in parts of Europe; however, they reported that “similar attempts have been largely unsuccessful in the United States and Canada because of concerns about medico-legal risks, regulatory obstacles and financial disincentives.”³

In Canada, our medico-legal landscape and regulated health care system exist as they do for many reasons. We have not, for example, introduced nurse colonoscopists in Canada, despite experience suggesting efficacy, as reported in the UK national

audit that 11% of procedures were performed by nurse colonoscopists, meeting national standards, with a lower frequency of uncomfortable colonoscopy than physicians or surgeons.² Rex and colleagues stated that “the key to safety with EDP (Endoscopist-Directed Propofol) is to titrate the dose and avoid overshooting as much as possible.”³ This fear of overshooting speaks to the problem with this model of care — there is no one (i.e., an anesthesiologist) in attendance who is specifically skilled in airway management and can deal expertly with an apneic and perhaps hemodynamically compromised patient. I am not surprised that “concerns about medico-legal risks” and “regulatory obstacles” persist in Canada.

With respect to cost considerations specific to Canada, Pace and Borgaonkar stated that in Ontario, sedation for colonoscopy by an anesthesiologist increased the cost from \$346 (no anesthesiologist involved) to \$498, and health care facilities may have a financial incentive to use anesthesiologists in endoscopy units, because they (anesthesiologists) are paid through provincial health plans, whereas nursing staff are paid through a facility’s budget. In so saying, the authors implicitly acknowledge that the presence of anesthesiologists in endoscopy units of health facilities will result in reduced nursing costs, because of both greater efficiencies and reduced need for nursing staff during the endoscopy procedure, and also reduced per-patient nursing costs and reduced recovery room nursing time required as a result of shorter procedure times, faster turnover, and faster patient recovery and discharge. Pace and Borgaonkar also state that “in many private endoscopy centres in Canada, part of the anesthesiologist’s fee is used to support the centre.” Both of these points indicate that the anesthesiologist’s service fee is actually subsidizing the costs of endoscopy infrastructure and enhancing access to endoscopic procedures. The net cost of anesthesia services to the health system overall, then, is lower than what the authors suggested, and benefits in terms of improved access are substantial, albeit unquantified.

With respect to the effect of deep sedation on anesthesia quality, the authors refer to a study by Wadhwa and colleagues, a meta-analysis that involved 2518 patients that actually found no difference in the risk of cardiopulmonary complications (hypoxia, hypotension and arrhythmias) for using propofol in comparison with traditional narcotic/benzodiazepine sedation.⁴ This study reported odds ratios (ORs) and not event rates, and the small number of patients suggests that it may have limited power to detect adverse events, particularly when considering provider subgroups.⁴ Were anesthesiologists more likely to have been involved in the care of the patients at highest risk?

The authors also refer to a study by Wernli and colleagues that found that use of anesthesia services in colonoscopy was associated with a higher risk of complications, “including perforation, hemorrhage, pneumonia and stroke.”⁵ In fact, the data in this article that were specific to overall rates of colonic perforation, “pneumonia,” and “stroke and other central nervous system events” were not significant, because the 95% confidence intervals (CIs) for these outcomes include 1.0, the line of unity. Another cited study that showed a small increase in aspiration pneumonia with anesthesia assistance had an author-acknowledged “very low” event rate (0.0061%), and there was no stratification or analysis based on possible selection for anesthesia services, fasting status, elective versus urgent/emergent procedures and body mass index. In addition, the diagnostic criteria, management and outcomes for the incidents of aspiration were not reported.⁶

Pace and Borgaonkar suggested that “deep sedation may limit the ability of the operator to use the best technique,” while citing a randomized controlled multicentre trial⁷ that showed that changes in patient position from left lateral to supine to right lateral at stages during withdrawal of the colonoscope improved the adenoma detection rate, compared with maintenance of the left lateral position throughout colonoscopy withdrawal. In my experience, the patient’s degree of sedation and ability (or not) to co-operate has never been an

impediment to implementation of a position change that the endoscopist feels will be necessary or helpful. During deep sedation, the anesthesiologist is present to assist with changes in patient position (I have done so myself on numerous occasions), as well as to maintain a patent patient airway as needed. Furthermore, traditional sedation techniques targeted at “moderate” sedation cannot guarantee a patient who is cooperative and able to position themselves on command. Some of these patients may have exceeded their intended level of sedation, may need assistance with position changes, and may be at risk of airway obstruction, particularly in the supine position. Therefore, the presence of an anesthesiologist may make it safer to institute patient position changes, except in the most responsive and purposeful patients.

Another newer colonoscopic technique, intended to improve adenoma detection rate, which Pace and Borgaonkar feel is less desirable to perform under deep sedation is described in a Cochrane review published in 2015.⁸ Although this review did not specifically address sedation modalities, the technique was noted to be associated with “significantly less pain ... compared with the standard procedure” (reduction in maximum pain score of 1.57 on a scale of 10). It is perfectly reasonable that, as in all cases, the choice of sedation, and the possible request of assistance of an anesthesiologist, is a decision to be made between patient and endoscopist, with consideration of patient preference, patient condition and endoscopist preference in anticipation of planned techniques.

The authors do acknowledge “some benefits of using propofol, including a quicker onset of action and a shorter recovery time compared with traditional sedation.”¹ However, they failed to cite best-quality evidence from a 2008 Cochrane review.⁹ With respect to patient satisfaction, in this review, pooled results, excluding studies involving patient-controlled sedation, showed that patient satisfaction was about five times higher with propofol than with “traditional agents” (OR 0.19, 95% CI 0.16–0.55). Other results in this review showed no difference in the rate of colonic perforation when propofol was used compared with “traditional sedatives,” and patients were discharged 20.9 minutes

faster. Some of the authors’ conclusions were “Propofol for sedation during colonoscopy for generally healthy individuals can lead to faster recovery and discharge times, increased patient satisfaction without an increase in side effects,” and “Propofol may provide an advantage to endoscopy units, where the throughput of procedures is limited by the availability of recovery room resources. Faster turnover of patients through such endoscopy suites using propofol may help to meet some of the increasing demands for endoscopy. Moreover, higher patient satisfaction when propofol is used for sedation during colonoscopy may also lead to higher patient compliance with subsequent endoscopies.”⁹

In the Canadian context, for most colonoscopy procedures, deep sedation involves propofol administered by an anesthesiologist. The title of the commentary declares deep sedation to be, “Anesthesiologist assistance at colonoscopy is unnecessary and wasteful.” Any endoscopist believing that anesthesiologists never bring value to the care of patients undergoing colonoscopy almost certainly never performs the procedure on patients with complicated conditions. Anesthesiologists are requested to assist with sedation of patients for colonoscopy in a number of circumstances, including but not limited to pediatric patients or adult patients with dementia or psychiatric disorders; patients with severe comorbidities who are highly susceptible to adverse cardiorespiratory events from even minimal doses of sedatives; patients in whom the procedure is expected to be prolonged, complicated or extraordinarily painful; patients who are extremely difficult to sedate as a result of habituation to opioids or anxiolytics; patients at high risk of aspiration who would benefit from endotracheal intubation while sedated; and patients who refuse colonoscopy without deep sedation. The incremental anesthesiologist cost of \$152 identified by the authors, far from being “wasteful” is, I would argue, excellent value for ensuring the safety and comfort of such high-risk and high-need patients.

Decisions regarding sedation options should be made as a result of discussion between the patient and endoscopist, with consideration of patient preference and condition, as well as endoscopist preference in anticipation of planned tech-

niques. Anesthesiologists do not participate in colonoscopy procedures when neither the patient nor the endoscopist feels that their involvement is necessary or desirable, and in most teaching hospitals, their attendance is exceptional rather than routine.

Had the title of the commentary stated that “Routine deep sedation for colonoscopy is often unnecessary,” perhaps this would have more accurately reflected the authors’ message and served as a more collegial basis for discussions between endoscopists, anesthesiologists and policy-makers about how service delivery may be improved in a fiscally responsible fashion, while enhancing safety, efficiency, effectiveness and access.

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