

Minor adverse events postcolonoscopy

Catherine Dubé MD MSc FRCPC

In recent years, the *Canadian Journal of Gastroenterology and Hepatology* has provided its readership with multiple publications to further our understanding of what constitutes a high-quality procedure as well as a desirable colonoscopy experience (1-4). In the current issue of the *Journal*, the study by Marquez Azalgará et al (5) (pages 595-599) enhances our understanding of yet another facet of quality colonoscopy by documenting the rates and types of postcolonoscopy minor adverse events (MAEs) occurring in the early (two days) and late (14 and 30 days) postcolonoscopy period. The major points to note from the study are that: patients commonly experienced MAEs after colonoscopy, with 17.3% (95% credible interval [CrI] 8.1% to 30%) of participants reporting at least one MAE at two days post-colonoscopy; these MAEs may last for several weeks postcolonoscopy, with 10.5% (95% CrI 2.9% to 23.7%) of participants reporting at least one MAE at 14 days; and the most common type of postcolonoscopy MAE is abdominal pain (reported by 8.6% and 4.1% of respondents at two days and 14 days, respectively).

One major caveat to note about any study investigating post-colonoscopy MAEs is that a large proportion of the patients undergoing colonoscopy will have experienced frequent abdominal symptoms before the procedure, as described by the authors. Postcolonoscopy MAEs may, therefore, be attributable to an underlying condition. While clinicians may be concerned about the need to attribute the symptoms to either the procedure, the underlying condition of the patient, or both, this attribution may not be relevant to the patient, whose experience nevertheless remains. In this way, the study by Marquez Azalgará et al (5) furthers our awareness of the patient's experience with colonoscopy. This knowledge can, in turn, help the informed consent process by enabling us to inform patients of what to expect not solely on the day of the procedure, but also afterward. When asked about their expectations of a high-quality colonoscopy service, focus group participants expressed a desire to obtain as much information as possible about the procedure, including what to expect after the procedure (4). It is also common to observe that the anxiety triggered by not knowing what to expect may be perceived as worse than the symptoms themselves. This information can also be provided to patients on discharge from the endoscopy unit, and may help reduce the need for patients to contact a health care provider regarding these MAEs.

Postcolonoscopy abdominal pain is a symptom to reflect on. It was experienced by 8.6% of participants in the Marquez Azalgará et al (5) study, while other recent studies noted it in 11% to 17% of patients (6,7). Based on these reports, this pain typically lasts up to 14 days and rarely prompts patients to seek medical advice. We can, therefore, assume that it is mild and not associated with concerning symptoms such as bleeding, vomiting or abdominal pain. How can we best understand the cause of this pain? Its duration is well beyond that which would be caused by retained air and, even moreso, retained carbon dioxide. One can conceive that this pain is triggered by minor soft tissue trauma caused by pressure and traction forces applied to the colon during the procedure. Such trauma is probably limited to the colonic wall and adjacent mesentery in most cases, but has been related to life-threatening injuries such as splenic rupture (8). It is interesting to note that the forces applied to the colonoscope during insertion and withdrawal can now be measured with the help of special devices attached

to the scope (9,10). Significant differences in the measured push/pull force and torque values among endoscopists and along the length of the colon have been demonstrated (9). Recently, a comparison of the forces applied to the colonoscope during procedures performed with either moderate sedation (with a combination of meperidine or fentanyl and midazolam) or with propofol, demonstrated significant increases in peak and average force when sedation with propofol was used (10). It was assumed that this difference was related to the method of scope insertion and withdrawal with propofol, in which patient feedback is absent and the ability to reposition the patient is limited. In that study, the magnitude of forces observed were noted, in some cases, to be greater than the tear and perforation forces one can measure on surgical or cadaveric specimens. The authors noted a need to further study the rates of postcolonoscopy adverse events, and to study the correlation of force with clinical outcomes such as post-colonoscopy pain. If an association between postcolonoscopy pain and the intensity of the forces applied during colonoscopy is observed, the monitoring of postcolonoscopy pain will become highly relevant to practices that use propofol. More importantly, this would reinforce the increasingly recognized need to redefine endoscopy skills as those that allow minimal pressure and loop reduction.

In conclusion, it is important to recognize the occurrence of post-colonoscopy MAEs and to make patients aware of them. This further improves the informed consent process. Further research into the relationship between postcolonoscopy MAEs, sedation practices and procedural skills is needed.

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Department of Medicine, Division of Gastroenterology, University of Ottawa, Ottawa, Ontario

Correspondence: Dr Catherine Dubé, Department of Medicine, Division of Gastroenterology, University of Ottawa, Room A194,

The Ottawa Hospital – Civic Campus, 1053 Carling Avenue, Ottawa, Ontario K1Y 4E9. E-mail cdube@toh.on.ca

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