

# ADVANCES IN ENDOSCOPY

Current Developments in Diagnostic and Therapeutic Endoscopy

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## Colonoscopy in Patients With a Prior Hysterectomy



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### G&H What are the challenges of performing a colonoscopy in a patient who has undergone a hysterectomy?

**MR** Colonoscopy in general can be a challenging procedure because the colon is often quite mobile and tortuous, and passing the colonoscope along the length of the bowel can result in tension on the bowel mesentery, which can cause pain. Skill is required to pass the colonoscope comfortably around the entire length of the bowel. The procedure is made more difficult if patients have longer colons, and we know that women in general have a deeper transverse colon, which can make that part of the colonoscopy more challenging; therefore, colonoscopy can be more challenging in women because the female pelvis is wider and deeper than the male pelvis.

Performing a colonoscopy in patients who have undergone a hysterectomy involves additional challenges. After removal of some of the pelvic organs, the bowel can fall more deeply into the pelvis, which can increase angulation on the part of the bowel, particularly in the sigmoid colon. In addition, adhesions can form after any abdominal surgery, causing tethering of the bowel, which can make the angulation more acute. For all of these reasons, when a patient with a history of hysterectomy undergoes a colonoscopy, she may experience more discomfort than a patient who has not had a hysterectomy.

### G&H How did you and your colleagues design your recent study on the effect of previous hysterectomy on colonoscopy?

**MR** In England, the national bowel cancer screening program invites all individuals between the ages of 60

and 74 years to undergo a home test for fecal occult blood every 2 years. Approximately 2% will have a positive test result and will subsequently present for a colonoscopy. When the procedure is performed, a dedicated screening nurse records very detailed demographic information about the patient as well as the procedure, such as the medication administered, findings noted during the colonoscopy, difficulties encountered, and the comfort level experienced by the patient. All of this information is recorded in a single national database. The screening program began in 2006, so in 2012 my colleagues and I decided to examine the data to determine whether there was a correlation between the patient's comfort level and gender and, for female patients, between the comfort level and previous hysterectomy. We combed through a retrospective cohort study of just over 1000 patients who had come to the Tees Bowel Cancer Screening Centre for a screening colonoscopy, examined the details of those patients, including their age, gender, and pelvic surgical history, and correlated that information with comfort scores and other factors, including the amount of medication given.

### G&H What were your findings?

**MR** Our findings supported our clinical suspicion that the rates of moderate or severe discomfort varied significantly between women and men and, among women, between those who had undergone a hysterectomy and those who had not. We found that 5.8% of male patients reported either moderate or severe discomfort, compared with 10.4% of women without a hysterectomy and 17.8% of women with a hysterectomy, findings that were statistically significant.

We then examined whether there was a correlation between the comfort level and sedation. All we knew from the database was the total dose of sedation that a patient received. After performing retrospective analysis, we found that patients who received the most sedation experienced the most discomfort. Although this finding might sound counterintuitive, the underlying explanation is probably that if patients experienced discomfort during the procedure, they were given additional doses of medication in an attempt to counteract the discomfort. This finding shows that even with additional doses of medication, these patients still had a more uncomfortable experience in general.

**G&H** Based on these study findings, what are your recommendations regarding colonoscopy in women who have undergone a hysterectomy?

**MR** The first recommendation is to educate the endoscopy community that there is a clear association between hysterectomy and more discomfort during a colonoscopy. Having this knowledge can make a difference when patients are counseled before a colonoscopy; physicians can forewarn their patients that having had a hysterectomy can increase the chance of discomfort during the procedure. This recommendation is particularly important because I suspect that many colonoscopists are unaware of the association between colonoscopy discomfort and hysterectomy, and even the association between colonoscopy discomfort and gender. The main hope from this study is that it will increase physicians' awareness of these associations and, therefore, allow physicians to change their practices to try to improve outcomes.

There are several strategies that physicians can try. When scoping patients who have undergone a hysterectomy, physicians may opt to choose the most flexible colonoscope that is available, which can help them navigate tight angulations in the bowel and hopefully provide a more comfortable experience for patients. An early position shift to the right lateral position may also aid comfortable sigmoid intubation. Education also means that, whereas in our standard screening practice half of the patients will opt to have no sedation at all prior to the procedure, if we have a patient who has undergone a hysterectomy, we now routinely recommend that the patient receive some sedation because of the anticipation of more discomfort than usual. My colleagues and I also have a combination of oxygen and nitrous oxide (Entonox, Boc Healthcare) available during the procedure and now show patients how to use the patient-administered nozzle so that they can take additional doses during the colonoscopy.

The final recommendation is that patients carefully select their colonoscopist. In addition to colonoscopy being more challenging in patients with a hysterectomy than in

the average patient and more challenging than simpler procedures, it is important that patients have the most comfortable experience possible because patient satisfaction is paramount when it comes to endoscopic procedures. Therefore, it may well be that patients should be using the best colonoscopists for more difficult procedures to maximize the chances of a more comfortable experience.

**G&H** Has there been any research to suggest that specialized instruments, such as variable-stiffness, thin-caliber, or self-advancing colonoscopes, make it easier to perform colonoscopy?

**MR** There have been several studies, although none were of particularly high quality, on variable-stiffness endoscopes, and one study looked at an ultrathin colonoscope for patients who have had difficult colonoscopies (although the instrument is not yet readily available).

Anecdotally, there is no doubt that certain colons respond better to certain instruments. In a patient who has adhesions due to a hysterectomy or who has a very difficult, fixed diverticular segment, I would certainly choose the thinnest, most flexible instrument available because such a colonoscope is the best means to navigate through that segment of the bowel. In contrast, in a patient with a long, looping, and freely mobile colon—which is also challenging—a stiffer instrument may sometimes help.

**G&H** Are there any precautions or measures that can be undertaken to help prevent perforation or other complications in these patients?

**MR** If a patient experiences pain during a colonoscopy, that means that the bowel or bowel mesentery is being stretched, which can be a precursor to a perforation. Therefore, if a patient is in pain during the procedure, the physician should stop, consider what is causing the pain, and deal with the underlying issue. This does not necessarily mean giving the patient more sedation; it means withdrawing the loop or using a more flexible instrument to pass around a tight angulation. Such a strategy should help minimize the risk of perforation in challenging cases.

**G&H** Are there any other tips or preventative measures that can help endoscopists perform colonoscopy in these patients?

**MR** In the endoscopy community in the United Kingdom, we encourage position shifts during colonoscopy because shifting the patient's position can alter the internal anatomy of the colon. For example, if the patient has tight angulations and is in the left lateral position, shifting the patient

to either a supine or right lateral position may result in the angulations lessening or resolving completely. Position shifts during the procedure can also have a dramatic impact on how easy it is to intubate a patient. Shifting the patient is something that we readily do during the procedure.

On the other hand, something that we do not do very frequently in the United Kingdom is to use propofol. Although propofol sedation is very effective, in the United Kingdom it would involve having an anesthetist present during the colonoscopy, which is challenging for us for logistical reasons; it is not part of our standard practice. However, other units may wish to consider whether using intravenous propofol is a better strategy for colonoscopy in patients who have undergone a hysterectomy because, undoubtedly, it would help patients have a more comfortable experience.

In the international scoping community, there is a dichotomy between centers that routinely use intravenous propofol and centers that use conscious sedation, no sedation, or low-dose sedation with opioid analgesia; in the second group, the patient is fully awake and able to converse during the procedure. The use of intravenous propofol avoids the issue of patient discomfort even after a hysterectomy, but there are additional issues with having an unconscious or deeply sedated patient. The endoscopist's ability to assess the entire bowel may be reduced if the patient cannot be easily moved during the procedure. In addition, with this approach there may be a greater risk of perforation; if the endoscopist is stretching the mesentery, the patient cannot respond and say that he or she is in pain. One problem might be solved, but other problems may be introduced.

## G&H What are the next steps in research in this area?

**MR** My colleagues and I are planning to conduct a study to examine colonoscopy reattendance based on data from the national database. Within our screening program, patients come for a colonoscopy if they have a positive test result. If polyps are detected during the colonoscopy, the patient is placed in an ongoing surveillance program, and we know if he or she reattends or not. Therefore, it would be fairly straightforward for us to correlate reattendance rates with patients' gender and hysterectomy history. Such a study would help us determine whether having a bad experience one time means that a patient is less likely to undergo a repeat colonoscopy.

In addition to examining colonoscopy reattendance rates, the next steps for research include randomized controlled trials of instruments or different techniques in patients who have had a hysterectomy to see whether comfort can be improved from the outset.

*Dr Rutter has no relevant conflicts of interest to disclose.*

## Suggested Reading

Clancy C, Burke JB, Chang KH, Coffey JC. The effect of hysterectomy on colonoscopy completion: a systematic review and meta-analysis. *Dis Colon Rectum*. 2014;57(11):1317-1323.

Dyson JK, Mason JM, Rutter MD. Prior hysterectomy and discomfort during colonoscopy: a retrospective cohort analysis. *Endoscopy*. 2014;46(6):493-498.

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