Re-learning colonoscopy: just a matter of time

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Colonoscopy is an important tool in the diagnosis and treatment of a variety of gastrointestinal conditions. Its main role however, is in the screening and surveillance of colorectal neoplasia but recent data has pointed out that its protective effect against colon cancer in the right or proximal colon is lower than it was previously thought.¹⁻³ Reasons for this decreased protection include among others: failed cecal intubation (incomplete colonoscopy), missed polyps, failure in recognizing flat and serrated lesions, incomplete polypectomy, inadequate bowel preparation, failure to adequately inspect all the colonic mucosa, including a faster than recommended withdrawal time. In addition, subspecialty of the performing endoscopist and setting where the colonoscopy is performed may be added important factors in the decreased protection in the right/proximal colon. Finally, an aggressive biologic behavior, including an alternative transformation sequence to the usual adenoma-carcinoma sequence such as the serrated pathway may also be a significant player in the lack of full protection by colonoscopy in the right/proximal colon.⁴

Technological optical advancements have helped increasing the detection of lesions otherwise not apparent while using outdated colonoscopes/monitors. The use of narrow band imaging (NBI) may help to differentiate, although not to increase the detection rate, lesions in the colon. The use of chromoendoscopy may likewise help to delineate more accurately the boundaries of any suspected lesion and improve its complete removal. In contrast to advancement in technology, techniques to carry out the colonoscopy have not changed too much. In an effort to increase the quality of colonoscopy, withdrawal time, quality of colonic mucosa inspection, retroflexed inspection in the right colon, segmental tandem withdrawal and use of the “third eye” have been some of the proposed measures to increase the

detection rate of lesions (adenoma detection in particular) in the right/proximal colon. Adoption of the split dose bowel preparation that leads to better quality bowel preparation, especially in the right colon and better sedation may impact the ADR by enhancing a more thorough inspection of the colonic mucosa and reducing the “distraction time” the endoscopists have in dealing with these issues otherwise.

A simple, inexpensive technique proposed as an effective way to detect right/proximal colonic polyps (adenomas) is the water method.⁵⁻⁶ The method uses water in lieu of air during the insertion phase of colonoscopy. Air insufflation not only distends the lumen unnecessarily causing increased discomfort (and thus increased need for sedation), but elongates the colon and accentuates angulations rendering the procedure more difficult. The use of water instead of air decreases these potential problems and at the same time may help straightening the colon, particularly in the sigmoid area, due to its sinking effect. More importantly, water exchange⁶ which in contrast to water immersion, relies on the judicious use of water to find the lumen avoiding water over distension (which may also cause discomfort) allows also the exchange of dirty for clean water as the scope is advanced rather than removing the water during the withdrawal phase. This simple method avoids the possible distraction (from removing extra liquid) and allows focusing in the better inspection of the mucosa during withdrawal. The technique has now been recognized in different studies as a method that not only allows a higher completion rate when used with no sedation but also when using sedation on demand; decreases the amount of sedatives required; increases patient's satisfaction; decreases the need for nursing/technician involvement in providing external pressure or change in patient's position; is associated with better bowel preparation quality, better patient tolerance and more important-

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Abbreviations: NBI, narrow band imaging

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ly, an increased adenoma detection rate in the right/proximal colon (where ADR matters the most).⁷ Every experienced endoscopist has had anecdotal experience that using water, particularly in the sigmoid colon, facilitates the insertion of the colonoscope through this segment. Likewise, many endoscopists claim they use the “water method” by using variable amounts of water in conjunction with air insufflation at different stages of their procedures. They however do not realize that insufflating even small amounts of air, also elongates and over distends the colon and accentuates its angulations. Even those who strongly believe they perform colonoscopy with the water method without insufflating air, admit they do not do it by turning the air pump off. It is thus still possible that the inadvertent use of air takes place during these procedures.

Learning a new technique, especially for seasoned, experienced endoscopists may be viewed as cumbersome and not very appealing. There is always an inherent resistance to change and remain in the “status quo”. Excuses for not even trying a new technique are numerous although many times unfounded. Although simple, the water method still needs to be learned and mastered.⁸ The learning curve is dependent on the endoscopist’s willingness to truly learn the technique because there is a possibility of improving patient’s outcomes. In this issue of the Journal, Dr. Fischer reports his own learning curve experience with the water method.⁹ He must have first, truly believed the method could favor his patients and accepted the generous on-site coaching provided by

Felix Leung, a pioneer on the adoption and dissemination of this simple method. Dr. Fischer’s reported experience is unique and may serve as an example for others to follow. He performs endoscopy in a non-academic community practice which in itself is extremely challenging. For starters, he has a set number of procedures to perform in a very tight time-constrained environment where efficiency is of paramount importance. He did not have the luxury of spending too much time with each patient despite nothing other than time was being potentially compromised (there was nobody to take the slack for him) but still had the courage and the will to learn the technique and report his experience. Dr. Fischer found a way to accommodate his learning process in a clever way without compromising his schedule, his patient care or, his team. He set aside time to his per-patient allotted time to learn and practice the water exchange technique allowing himself no more than 5 min without advancing the scope with water before turning the air pump on and allowing himself completing the procedure on time (risk of rushing the withdrawal time). He performed a total of 348 colonoscopies at 3 different endoscopy unit locations, each with their own challenges. Although his final reported ITT cecal intubation rate was below the benchmark of at least 90%, his results indicate that the learning curve continued to improve over time (his latest group of patients had an ITTCIR of 88% and 81% for men and women, respectively) and there is no reason to believe that perhaps with a few more colonosco-

pies performed using the water exchange technique, he would have reached the reported benchmarks. The study’s main message of course is that learning this simple, inexpensive technique with potential patient’s outcomes implications (i.e., increased adenoma detection rate), is possible for experienced endoscopists in the private practice setting.

References

1. Baxter NN, Goldwasser MA, Paszat LF, Saskin R, Urbach DR, Rabeneck L. Association of colonoscopy and death from colorectal cancer: a population-based, case-control study. *Ann Intern Med* 2009; 150:1-8.
2. Brenner H, Hoffmeister M, Arndt V, Stegmaier C, Altenhofen L, Haug U. Protection from right- and left-sided colorectal neoplasms after colonoscopy: population-based study. *J Natl Can Inst* 2010; 102:89-95.
3. Brenner H, Chang-Claude J, Seiler CM, Rickert A, Hoffmeister M. Protection from colorectal cancer after colonoscopy: a population-based, case-control study. *Ann Intern Med* 2011; 154:22-30.
4. Gurudu SK, Ramirez FC. Quality Measurement and Improvement in Colonoscopy. In *Techniques in Gastrointestinal Endoscopy*. 2012; 14:21-8.
5. Ramirez FC, Leung FW. The water method is associated with higher adenoma detection rate (ADR) - a head-to-head comparative study. *J Interv Gastroenterol* 2011; 1:135-40.
6. Leung FW, Harker JO, Leung JW, Siao-Salera RM, Mann SK, Ramirez FC, et al. Removal of infused water predominantly during insertion (water exchange) is consistently associated with an increase in adenoma detection rate - review of data in randomized controlled trials (RCTs) of water-related methods. *J Interv Gastroenterol* 2011; 1:121-6.
7. Leung FW, Leung JW, Mann S, Friedland S, Ramirez FC. The water method significantly enhances patient-centered outcomes in sedated and unsedated colonoscopy. *Endoscopy* 2011; 43:816-21.
8. Ramirez FC, Leung FW. The water method for aiding colonoscope insertion: the learning curve of an experienced colonoscopist. *J Interv Gastro* 2011; 1:97-101.
9. Fischer LS, Lumsden A, Leung FW. Water exchange method for colonoscopy: learning curve of an experienced colonoscopist in a U.S. community practice setting. *J Interv Gastroenterol* 2012;