Is colonoscopy best learned underwater?

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The water method is now established as a colonoscopy insertion technique that reduces intra-procedural pain and sedation requirements without compromising safety or procedure time. Data from Veterans Affairs facilities in the United States reveal that among veterans accepting sedation on demand the majority are able to undergo colonoscopy without any sedation with the water method.¹ Several prior reports suggest that the reduction in pain also applies to procedures performed with the water method by trainees, particularly moderately experienced trainees. Studies from the United States and Asia demonstrate that the water method may even decrease procedure time for trainees.² The advantages of the water method further extend to the supervising clinician if the trainee is unable to complete the procedure; an excessively distended air-filled colon presents a more challenging case than a colon with some water in it.³ Increased cecal intubation rates have also been reported with the water method, especially among colonoscopists with limited experience in scheduled unsedated colonoscopy.⁴ This trend has been less pronounced among more experienced colonoscopists who achieve very high intubation rates with either approach. Emerging data suggests that there may also be an increase in the adenoma detection rate with water. A review of the recent trainee studies comparing the water and air techniques reveal the superiority of the water method across studies and non-inferiority even in the least favorable study.^{3,5} Data further confirms the benefits of the water method based on the outcomes achieved by a colonoscopist previously well-experienced in the conventional method who self-trained in learning the newer technique.⁶ Despite the abundance of studies, however, there is a relative paucity of data on the potential role of the water method early in colonoscopy training.

In this issue of the *Journal of Interventional Gastroenterology* (JIG), Ngo et al. compare the water method with the conventional air method in teaching colonoscopy to inexperienced trainees. A major strength of this work is in its design as a prospective randomized study. There are significant logistical and psychological barriers involved in introducing a relatively new technique such as the water method very early in training when many supervising physicians are already quite anxiously monitoring enthusiastic young trainees advancing through the colon without a good appreciation of the risks and pitfalls. The authors are to be commended for pressing on despite the challenges. The study design whereby each trainee was randomized to spend 6 months with a supervising physician who taught the water method or with a supervising physician who taught standard air insertion, and then switched for the second 6 months, could potentially introduce some confounding, but this was likely a necessary compromise dictated by the fellowship program. Despite the relatively small sample size in this interim report, there are clear positive trends toward significance among the primary and secondary outcome measures. The primary endpoint of unassisted cecal intubation is an important outcome and suggests a trend toward superiority of the water method over the air method (83.3% vs. 55.5%, $p=0.35$). The results notably reveal that trainees rated the water method as significantly easier to learn compared to the air method ($p=0.007$). This study therefore suggests that introducing the water method early in training is good for the trainees and good for the patients.

In the context of prior studies, this report suggests that there is a meaningful role for using the water method early in colonoscopy training. We welcome more data and work from the authors on this topic to further improve our understanding of this role. In addition,

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these promising results suggest that it is may be feasible to proceed with a definitive multicenter study comparing water method and air insertion from the very beginning of training.

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Conflict of interests

None.

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