



An intraprocedural cleansing system to improve inadequate bowel preparation during colonoscopy CME

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BACKGROUND

Inadequate bowel preparation (IBP) is commonly encountered during colonoscopy, often cited to be over 25%, despite various preprocedural interventions.^{1,2} The Pure-Vu EVS System (Motus GI Holdings, Inc, Fort Lauderdale, Fla, USA), a Food and Drug Administration–cleared oversleeve-based intraprocedural cleansing system (Fig. 1), is a solution for IBP using high-intensity jets of water and large-caliber suction to efficiently cleanse the colon while not impeding the use of the working channel of the colonoscope. We present 3 cases of IBP or obstructed visualization in the case of bleeding in which we used the device to improve endoscopic visualization and successfully complete colonoscopies.

DESCRIPTION OF THE DEVICE AND SETUP

Device components

The intraprocedural cleansing system consists of a single-use oversleeve device, the device console, and foot pedals (Figs. 1 and 2). A standard or slim colonoscope of any manufacturer with a length of 1630 to 1710 mm and an outer diameter range of 11.7 to 13.7 mm can be used.

Device setup

Setup of the device involves loading the oversleeve onto the colonoscope and preparing the workstation for use, as described in Video 1 (available online at www.videogie.org).

Abbreviation: IBP, inadequate bowel preparation.

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CASES

Case 1 illustrates the use of the device in a patient with suspected postpolypectomy bleed who declined oral bowel preparation with significant melena throughout the colon. The intraprocedural cleansing system effectively cleared fecal debris (Fig. 3), exposing the location of the bleeding at the prior polypectomy site. As the device does not inhibit the use of the working channel, the site was easily treated with 2 hemostatic clips.

Case 2 reviews a surveillance colonoscopy in a patient with spinal cord injury and a long, redundant colon (Fig. 4) who had IBP despite adherence to colon preparation. Extensive fibrous debris throughout the colon prohibited visualization. The robust cleansing power and large volume suction of the device allowed the successful colonoscopy without clogging the working channel, improving the Boston Bowel Preparation Score from 2 to 8.

Case 3 demonstrates the utility of using the device as a rescue method when endoscopic visualization is compromised due to bleeding in the setting of perforation during a full-thickness resection case. The high-intensity water jets, and more importantly, the large caliber suction, allowed for hemostatic clip placement to repair the defect.

OUTCOMES

Multiple studies have proven the efficacy of prior generations of the intraprocedural cleansing system with improved Boston Bowel Preparation Score and rates of adequate bowel preparation to greater than 95%.³⁻⁶ The newest generation of the device is improved in that it can be loaded easily enough to be used without preprocedural planning.⁷ No adverse events were experienced in these cases using the device. Limitations of the device include a learning curve for its use and longer procedure times. However, it is difficult to distinguish whether the device itself led to longer procedure times or rather that cases with IBP are inherently longer. Preliminary data at our center show a trend toward faster procedure times with more frequent use of the device. Additionally, while the procedure time may be longer, achieving adequate bowel preparation mitigates the need for short-interval repeat colonoscopies and allows timely therapeutic interventions.

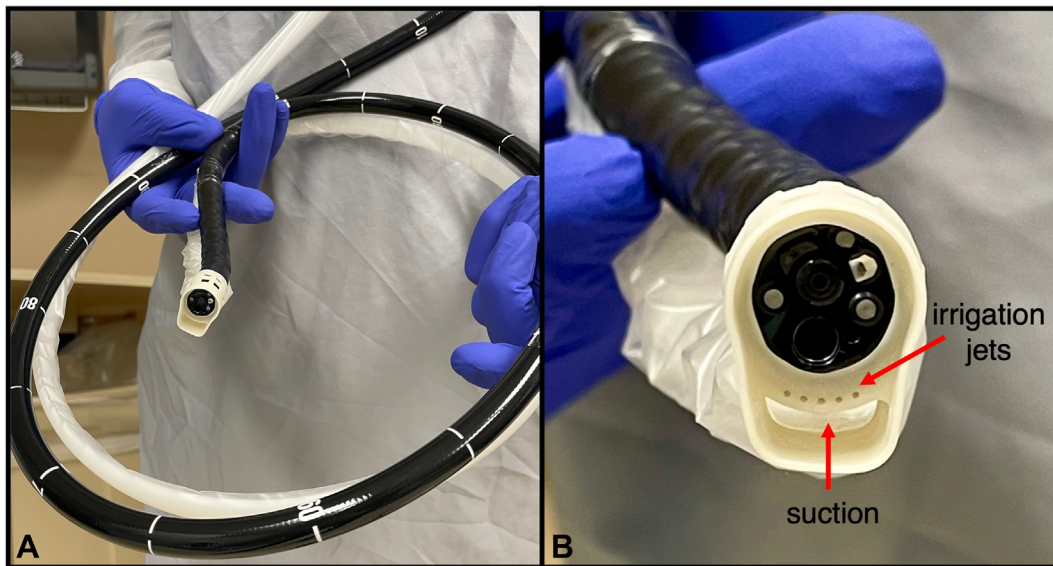


Figure 1. Oversleeve-based intracolonic cleansing system. **A**, Oversleeve device (the clear and white plastic) loaded onto a colonoscope. **B**, Cross section of the distal tip of the colonoscope with the device loaded, highlighting the 5 irrigation channels and large-caliber suction.



Figure 2. Device workstation. In addition to the single-use oversleeve device, the intracolonic cleansing system consists of a device workstation (**A**) with associated control foot pedals (**B**).

The cases described here highlight the versatility of using this device in achieving optimal bowel preparation for screening/surveillance examinations, and they highlight its

use as a rescue method when visualization is compromised by intracolonic adverse events such as perforation with bleeding.

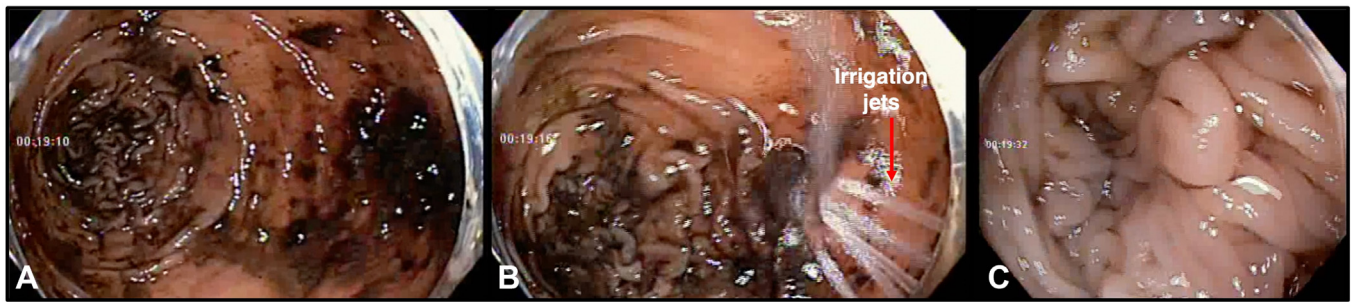


Figure 3. Before and after intraprocedural cleansing. The intraprocedural cleansing system was used in a patient with suboptimal bowel preparation in the setting of postpolypectomy bleeding. Significant melena was initially seen on endoscopic visualization (**A**), so the irrigation jets of the device were used to clear the melena (**B**) to improve the adequacy of bowel preparation (**C**) and to find the source of bleeding.

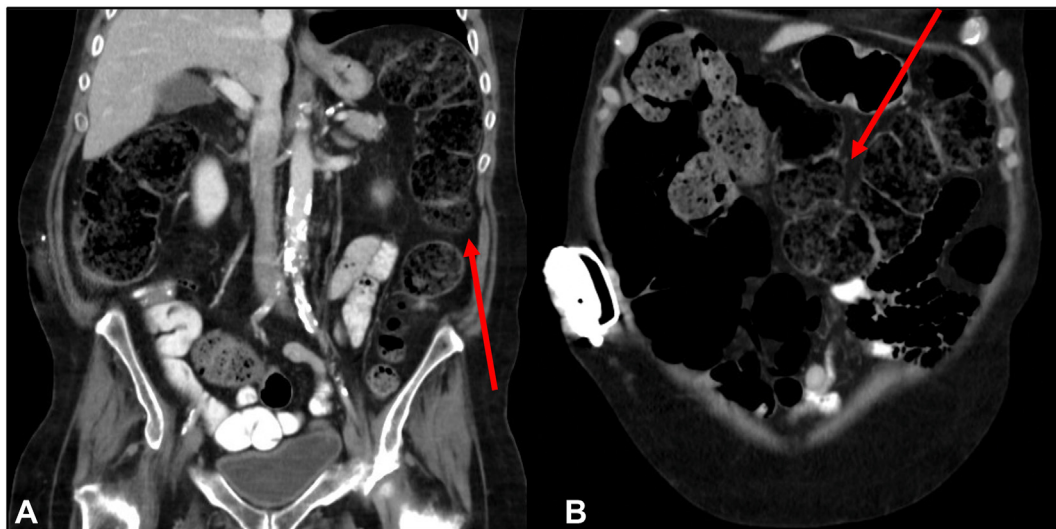


Figure 4. Imaging findings of a long, redundant colon. **A**, Coronal CT colonography showing a long (270 cm) colon with a sigmoid colon that almost reaches the upper abdomen. **B**, The redundant colon takes a tortuous path throughout the abdomen.

DISCLOSURE

Dr Hanson is a consultant for MotusGI. Motus GI did not play a role in the study design, collection, analysis/interpretation of data, or writing of the report. Dr Bilal is a consultant for Boston Scientific. All other authors disclosed no financial relationships relevant to this publication.

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