Adjustable ColoWrap® Colonoscopy Compression Device Shortens Cecal Intubation Time During Colonoscopy

Seth A. Gross, MD[1], Jean Wang, MD, PhD[2], Tony Kalloo, MD[3]

[1]NYU Langone Medical Center, [2]Washington University in St. Louis, [3]Maimonides Medical Center

INTRODUCTION

Abdominal compression devices have been shown to reduce looping and shorten cecal intubation time during colonoscopy. ColoWrap is the first abdominal compression device designed specifically for colonoscopy. The current version of the ColoWrap is the only device that allows the amount and location of abdominal pressure to be adjusted during the procedure. However, it is unclear if the ability to adjust pressure intra-procedurally offers additional benefit in reducing looping or mitigating the need for manual abdominal pressure and patient repositioning. We aimed to determine the impact of intra-procedural adjustability by conducting a chart review comparing colonoscopies performed using the current ColoWrap design featuring intra-procedural adjustment (GEN 2) with procedures performed using the original ColoWrap device (GEN 1), which offered limited intra-procedure adjustability.



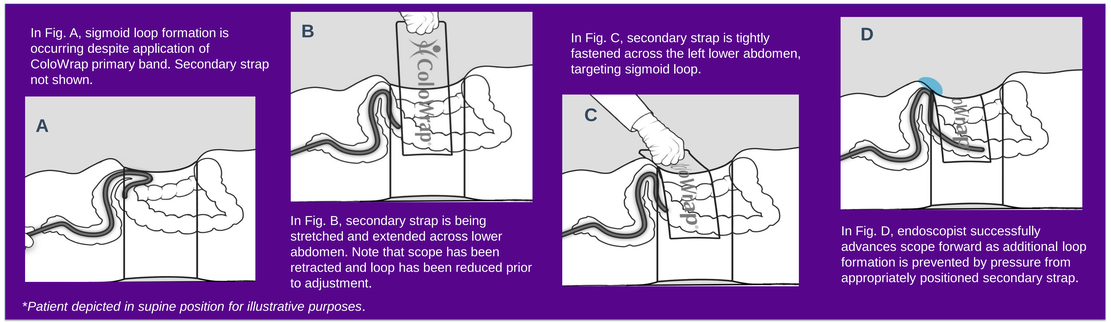


METHODS

This retrospective, multi-center, observational chart review included patients that underwent colonoscopy using the GEN 1 or GEN 2 ColoWrap device between June 16, 2014 and November 11, 2020. Demographics and procedural information were abstracted from patient records. The primary outcome was cecal intubation time (CIT). Secondary outcomes included the need for manual abdominal compression and patient repositioning.

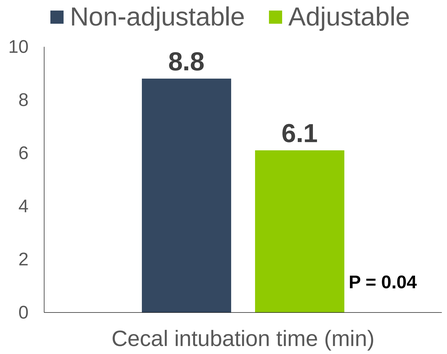
Patient and Procedure Characteristics	Gen 1 (Non-adjustable) n = 68	Gen 2 (Adjustable) n = 385	P
Age, mean ± SD	58.7 ± 11.0	62.3 ± 10.8	0.06
Female, n (%)	34 (50.8)	148 (38.4)	0.06
BMI, mean ± SD	30.7 ± 6.5	33.8 ± 8.1	**0.02**
Prior abdominal surgery, n (%)	22 (32.4)	59 (15.3)	**0.002**
Abdominal hernia, n (%)	1 (1.5)	29 (7.5)	**0.03**
Propofal sedation, n (%)	28 (41.8)	228 (59.2)	**0.01**
Fellow involvement, n (%)	5 (7.4)	47 (12.2)	0.22

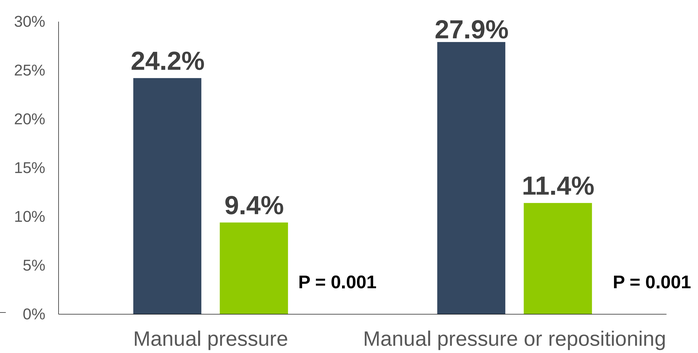
COLOWRAP INTRA-PROCEDURAL ADJUSTMENT TO TARGET SIGMOID LOOP (EXAMPLE)



RESULTS

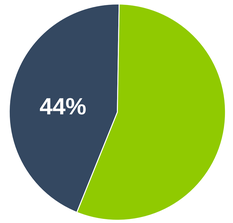
452 procedures were reviewed. 68 (17.7%) were performed using ColoWrap GEN 1 and 385 (85.0%) were performed using ColoWrap GEN 2. There were no differences in patient age, gender, and fellow participation between groups, however mean BMI was higher in the GEN 2 group (30.7 vs. 33.8, p = 0.02). In addition, patients in the GEN 2 group had less prior abdominal surgery (15.3% vs. 32.4%, p = .001), but a greater incidence of abdominal hernia (7.5% vs. 1.5%, p = 0.03). Propofol sedation was used more commonly in the GEN 2 group (59.2% vs. 41.8% of procedures, p = 0.01). Intra-procedural pressure adjustments were made in 170 (44.5%) of colonoscopies performed using the GEN 2 device. Overall, mean cecal intubation time (CIT) was faster when procedures were performed using the GEN 2 ColoWrap (6.1 min vs. 8.8 min, p = 0.04). Manual abdominal pressure and manual pressure and/or patient repositioning combined were needed less frequently with the GEN 2 device (9.4% vs 24.2% of procedures, P= 0.001; 11.4% vs. 27.9% of procedures, P < 0.001, respectively). In a multi-variate analysis controlling for age, gender, BMI, fellow participation, abdominal hernia, history of abdominal surgery, poor bowel preparation, sedation, and polyp removal during insertion, colonoscopies performed using the GEN 2 adjustable ColoWrap had increased odds of having CIT < 6 min (OR: 2.45, 1.003-5.91).





44.2%

Percentage of colonoscopies performed using ColoWrap Gen 2 (adjustable) device in which magnitude and direction of abdominal pressure were adjusted intra-procedurally.



Outcomes	Gen 1 (Non-adjustable) n = 68	Gen 2 (Adjustable) n = 385	P
Cecal intubation time (min)			
mean ± SD	8.8 ± 8.4	6.1 ± 4.8	**0.04**
CIT ≤ 6	18 (42.8)	238 (61.8)	**0.02**
CIT ≥ 10	8 (19.1)	50 (13.0)	0.30
Manual pressure, n (%)	16 (24.2)	36 (9.4)	**0.001**
Patient repositioning, n (%)	7 (11.7)	20 (5.2)	0.07
Manual pressure or patient repositioning, n (%)	19 (27.9)	44 (11.4)	**0.001**
Polyp detection, n (%)	31 (45.6)	246 (66.9)	**0.001**

CONCLUSION

The current ColoWrap design which allows pressure to be adjusted during the case was associated with faster cecal intubation and less need for ancillary maneuvers relative to its non-adjustable predecessor. Intra-procedural adjustment appears to offer additional anti-looping benefits and should be prioritized in future colonoscopy compression device designs.

CONTACT:

Seth A. Gross, MD
Clinical Chief, Gastroenterology and Hepatology
NYU Langone Medical Center
Email: Seth.gross@nyulangone.org

RESEARCH POSTER PRESENTATION DESIGN © 2015
www.PosterPresentations.com