

# USEFULNESS OF AN ENDOSCOPE WEIGHT-REDUCING AID (ENDOSCOPE-SUSPENDING DEVICE) DURING GASTROSCOPY AND COLONOSCOPY

P1307

TF  
clinic

Takahiro Fujii  
TF clinic, Tokyo, Japan

## INTRODUCTION

In recent years, as the diagnostic/therapeutic endoscopic procedures continue to increase in numbers, the left-arm/-shoulder burden continues to increase for the endoscopists performing these procedures, resulting in their overuse injuries (upper extremity biomechanical overload).

## AIMS & METHODS

To help relieve the biomechanical overload associated with endoscopic procedures. Following installment of an infusion rail ①, an infusion runner system ② and an infusion stand ③ from the ceiling, a highly retractable Teflon tube ④ was connected to the infusion stand with its lower end ⑤ clipped to an endoscope, so that the endoscope could be left hanging from the system. With this endoscope weight-reducing aid (endoscope-suspending device), the infusion rail and the Teflon tube gave greater freedom to endoscopist movement during endoscopy. The endoscopes available at the clinic (GIF-XP260, GIF-Q260, PCF-Q240ZI, and CF-H260AZI; Olympus Inc) were compared, in a diagnostic setting, with the endoscope connectors attached to each system, for weight as well as for force exerted on each device, with or without the weight-reducing aid (endoscope-suspending device).

## RESULTS

The weight of each device with/without the weight-reducing aid (endoscope-suspending device) was 0.26 kgf/0.52 kgf (0.5) for GIF-XP260, 0.34 kgf/0.61 kgf (0.56) for GIF-Q260, 0.21 kgf/0.61 kgf (0.34) for PCF-Q240ZI, and 0.22 kgf/0.7 kgf (0.31) for CF-H260AZI, respectively. The force exerted on each device with/without the weight-reducing aid (endoscope-suspending device) was 2.5 Newton (N)/5.0 N (0.5) for GIF-XP260, 3.3 N/6.0 N (0.55) for GIF-Q260, 2.1 N/6.0 N (0.35) for PCF-Q240ZI, and 2.2 N/6.9 N (0.32) for CF-H260AZI, respectively.

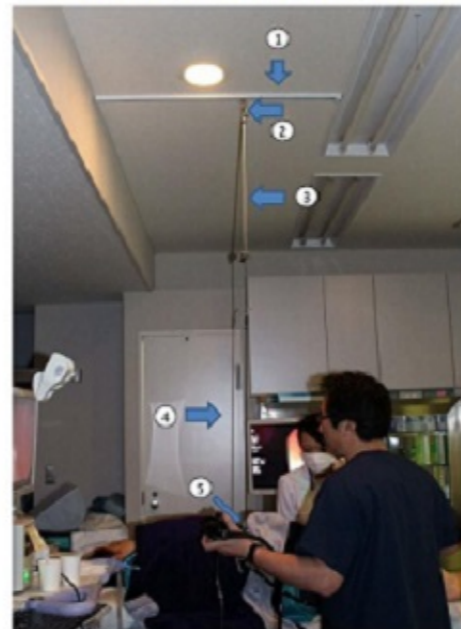
Weight of each endoscope with/without endoscope-suspending device

Endoscope with (+)/without (-) Endoscope-suspending device	Newton	kgf	
GIF-XP260	(+)	2.5	0.26
	(-)	5.0	0.52
GIF-Q260	(+)	3.3	0.34
	(-)	6.0	0.61
PCF-Q240ZI	(+)	2.1	0.21
	(-)	6.0	0.61
CF-H260AZI	(+)	2.2	0.22
	(-)	6.9	0.7

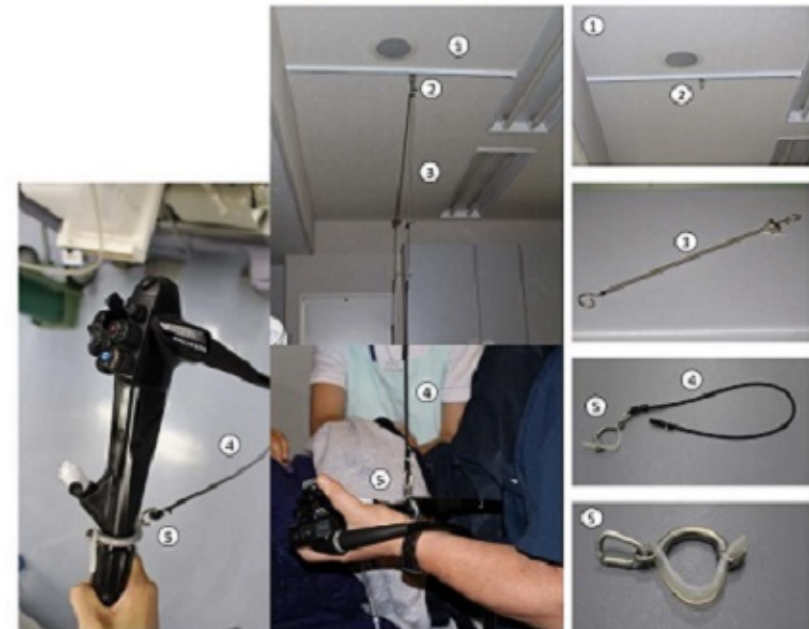
## CONCLUSION

An endoscope weight-reducing aid (endoscope-suspending device) was developed. Endoscope weight reductions with this aid may not only help decrease the physical burden on the endoscopist performing endoscopic procedures but allow him/her to maintain concentration during prolonged diagnostic/therapeutic procedures, thus leading to better diagnostic yield and clinical outcome.

Colonoscopy using an endoscope-suspending device



Endoscope-suspending device & its components





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### INTRODUCTION

In recent years, as the diagnostic/therapeutic endoscopic procedures continue to increase in numbers, the left arm/shoulder burden continues to increase for the endoscopist. These procedures, resulting in shoulder extremity burden.

### AIMS & METHODS

To help relieve the shoulder burden associated with endoscopic procedures, an endoscope-suspending device was developed. The aim of this study was to evaluate the usefulness of the device.

### RESULTS

The weight of each device with/without the weight-reducing aid (endoscope-suspending device) was 0.26 kg/0.52 kg (0.5) for GIF-Q260, 0.21 kg/0.47 kg (0.56) for GIF-Q2400, and 0.22 kg/0.48 kg (0.56) for H260AZI, respectively. The weight of the endoscope-suspending device with/without the weight-reducing aid was 1.1 N/5.0 N (0.5) for GIF-Q260, 2.1 N/5.0 N (0.35) for GIF-Q2400, and 2.2 N/5.9 N (0.32) for CF-H260AZI, respectively.

### CONCLUSION

An endoscope weight-reducing aid (endoscope-suspending device) was developed. Endoscope weight-reducing aid may not only decrease the physical burden of the endoscopist performing endoscopic procedures but allow him/her to maintain concentration during prolonged diagnostic/therapeutic procedures, resulting in a better diagnostic yield and clinical outcome.

Colonoscopy using an endoscope-suspending device & its components









