Bowel Preparation with Polyethylene Glycol (PEG) Injection after Upper Gastrointestinal Endoscopy: A Pilot Study

TU1375

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Background

The use of polyethylene glycol (PEG) in large volumes is required for bowel preparation prior to colonoscopy and is associated with considerable gastrointestinal (GI) distress. Therefore, a variety of approaches are currently being explored to address this issue, which include the development of novel bowel preparation agents or the use of PEG in reduced doses.

Objective

To improve GI distress in patients undergoing bowel preparation for colonoscopy.

Patients and Methods

1. After completion of routine upper GI endoscopic procedures, bowel cleansing with injection of PEG into the duodenal second portion and the gastric body (1000 and 200-500 mL, respectively) was attempted in this study as a modality for bowel cleansing to alleviate GI distress.
2. Of the 653 patients who underwent upper and lower GI endoscopy on the same day during the period between June 2011 and March 2013, a total of 152 patients who preferred PEG injection over conventional bowel preparations were included in the study to evaluate the efficacy of bowel cleansing with PEG injection as assessed by endoscopy and patient satisfaction with PEG injection to evaluate the usefulness of the modality. To reduce abdominal fullness during endoscopic examinations including PEG injection, CO_2 was used instead of room air for endoscopic insufflation.

Bowel Preparation with PEG Injection in Patients Undergoing Both Upper and Lower GI Endoscopic Procedures in One Day

Start an upper GI endoscopic procedure

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Inject 1000 mL of PEG directly into the duodenum first and then 500 mL of PEG into the stomach

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Give 3 "itopride hydrochloride 50 mg" tablets, 30 minutes after the upper GI endoscopic procedure

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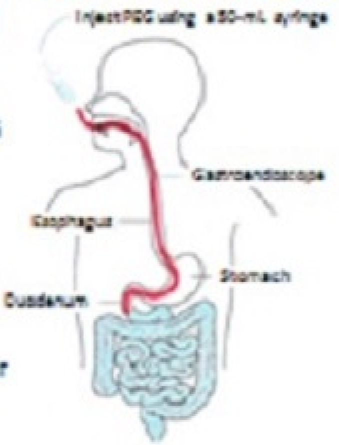
3 hours after PEG injection, start a lower GI endoscopic procedure (colonoscopy)



PEG injection using Gastroendoscope

Results

1. The 152 patients who opted for PEG injection (mean age, 63.0years of age) included more females than males (85 versus 67 patients). Of the 152 patients enrolled in the study, a total of 147 patients in whom full-volume PEG injection was feasible were included for current analysis, with the exception of 5 patients who withdrew due to vomiting or vagal reflex during PEG injection into the duodenum.
2. The mean time required for the upper GI endoscopic procedures including PEG injection was 13.7 minutes (range, 6 to 20 minutes) with the grade of GI distress as reported by the patients being "comfortable" in 122 patients (80.3%), "neither comfortable nor uncomfortable" in 26 (17.1%), and "uncomfortable" in 4 (2.6%).
3. The status of bowel cleansing was "good" in 118 patients (77.6%), "acceptable" in 24 (15.8%) and "poor" in 10 (6.6%), with the level of patient satisfaction with the modality being "excellent" in 131 patients (86.2%), "moderate" in 13 (8.6%), and "poor" in 8 (5.3%).
4. The mean time from completion of the upper GI endoscopic procedures to the start of the lower GI (colonoscopic) procedures was 126 minutes (range, 45-270 minutes).

No associated complication, such as aspiration pneumonia, was seen.

Summary of Results

PEG injection success rate*			96.7% (147/152)
Additional PEG fluid required**			7.2% (11/152)
Volume of PEG fluid required (No. of patients)		0.5L	7
		0.7-0.8L	2
		1.0L	2
Mean age (range)			63.0 years ([illegible])
Sex (M:F)			67:85
GI endoscopy	Mean procedural time		13.7 minutes (6-20 minutes)
	Grade of associated GI distress	"Comfortable"	80.3%
		"Neither comfortable nor uncomfortable"	17.1%
		"Uncomfortable"	2.6%
Status of bowel cleansing		"Good"	77.6%
		"Acceptable"	15.8%
		"Poor"	6%
Mean time to cleansing (range)			126 minute (45-270 minutes)
Cecal intubation rate***			99.3% (151/152)
Mean intubation time			6.4 minutes
Patient satisfaction		"Excellent"	86.2%
		"Moderate"	8.6%
		"Poor"	5.3%

*5 patients withdrew due to vomiting or vagal reflex during PEG injection into the duodenum.

** [illegible]

*** [illegible]

Conclusions

This pilot study showed that PEG injection during upper GI endoscopy allows both upper and lower GI endoscopic procedures to be performed on the same day and that it is convenient, feasible, useful and safe. A prospective comparative study is needed to prove the usefulness and efficacy of the modality over conventional bowel preparation.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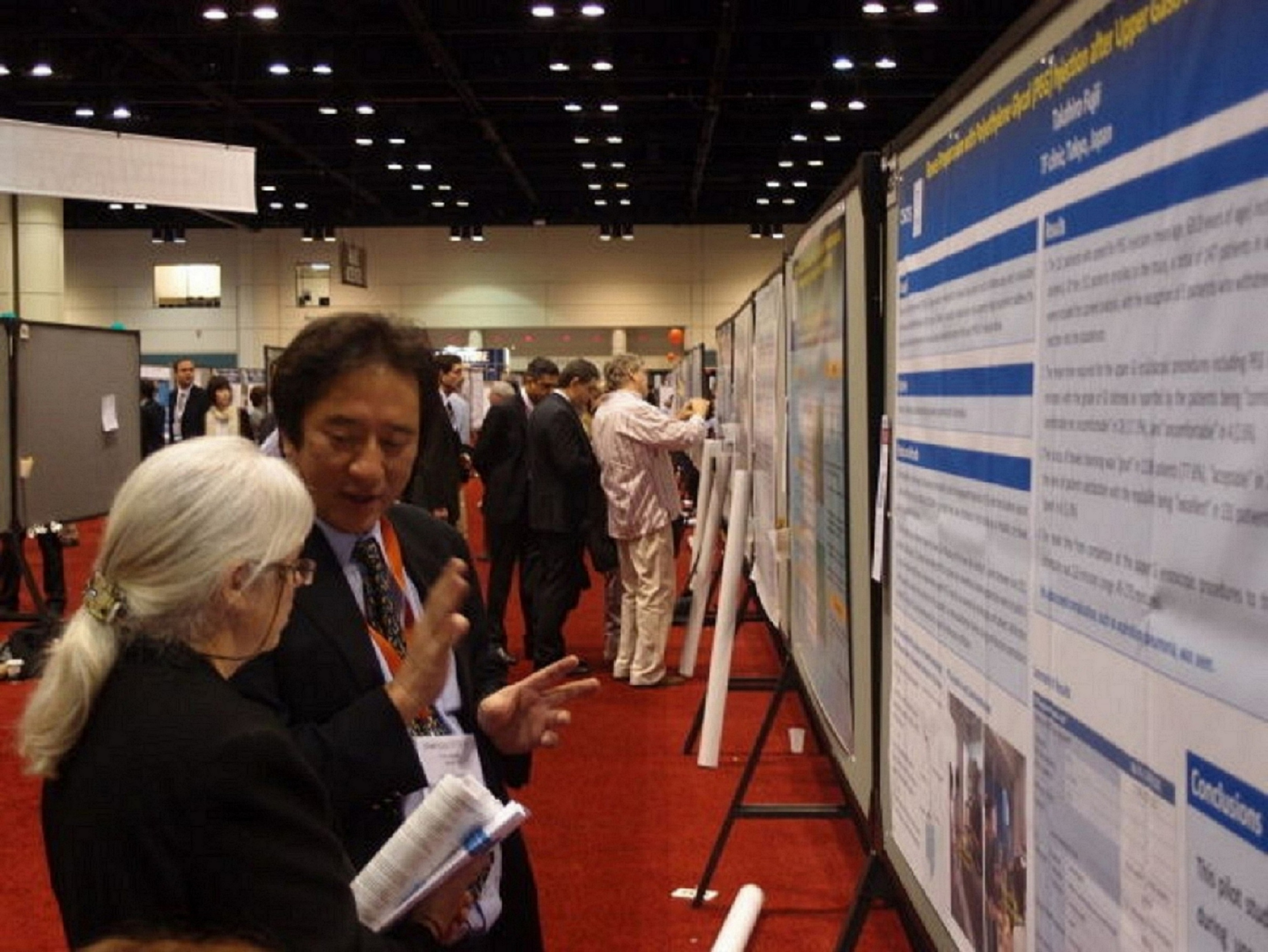

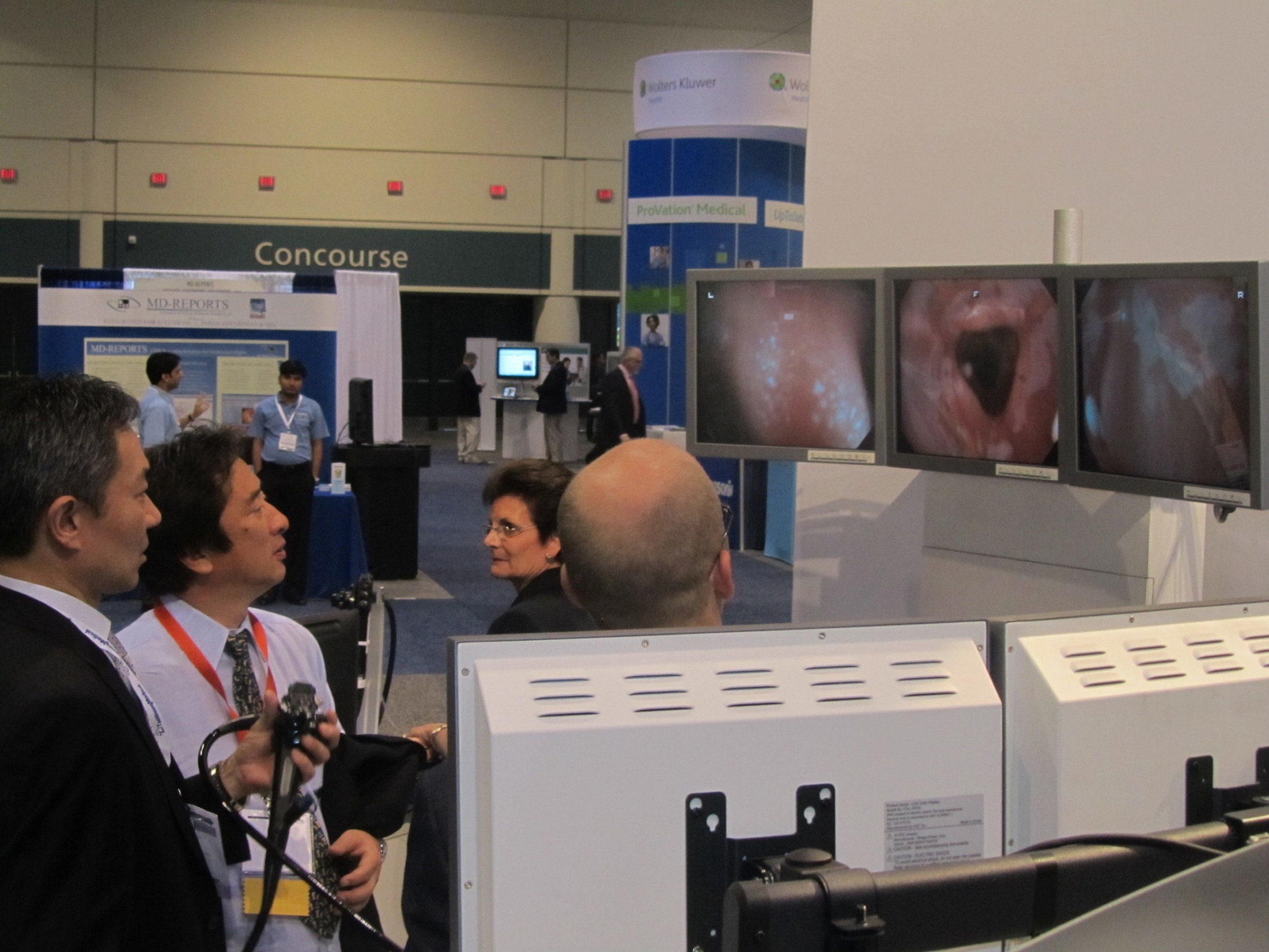
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