

# Establishing New Third Space Program: Importance of a Pre-procedure Checklist

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## INTRODUCTION:

- Third space endoscopy refers to techniques for accessing the submucosa, i.e., “the third space,” with subsequent submucosal tunneling to perform various minimally-invasive diagnostic and therapeutic interventions.
- There is limited availability of these techniques in tertiary US medical centers due to the extensive training required and technical challenges of these procedures.
- We share our experience establishing a new third space endoscopy program in our hospital and highlight the importance of using pre-procedure checklists.

## METHODS:

- This is a quality improvement study designed to train personnel in a new submucosal endoscopy program.
- Our PI is an established submucosal endoscopist who recently relocated to develop the third space procedures program at our institution.
- All staff underwent training consisting of a lecture and a review of tools and equipment used in the procedure before scheduling patients.
- The study has two phases: pre-intervention (phase 1) and post-intervention phase (phase 2). The intervention consisted of posting a pre-procedure checklist in December 2021 in each endoscopy suite .
- We reviewed each case to determine the need to correct the equipment set-up before the procedure in both phases.

## RESULTS:

In phase 1, from July to November 2021:

- 20 patients underwent third space procedures, including Z-POEM, POEM, and G-POEM.
- The CO2 was not set up in 10 patients (50%); it was changed from air to CO2 as a final check of the PI.
- An endoscopic cap was not placed in 8 patients (40%).
- The decompression kit was not checked each time. When the PI checked, it was not in place twice, once in September and another time in November 2021.
- All other items listed in the pre-checklist were set up correctly .

In phase 2, from December 2021 to June 2022:

- 38 patients underwent third space procedures, including Z-POEM, POEM, G-POEM, and ESD.
- All items in the pre-checklist were set up correctly and in place for use. However, the decompression kit was missing in one instance in April 2022.

## CONCLUSION:

CO2 was the most often forgotten item in procedure set-up, followed by the endoscopic caps. We found that posting a pre-procedure list in the endoscopic room is an essential and reliable intervention to improve workflow and procedural safety. It is also crucial for the endoscopist to check for the decompression kit monthly due to its infrequent use and easy misplacement.

## Pre-Submucosal Endoscopic Procedure Checklist

1	Carbon Dioxide insufflators
2	Antibiotics (IV Zosyn 4.5g or Levofloxacin 500mg)
3	Endoclips
4	Transparent Endoscope Distal Caps
5	Endosurgical Hybrid Knives
6	Power machine POEM settings
7	Needle Decompression Kits
8	Alcohol swaps