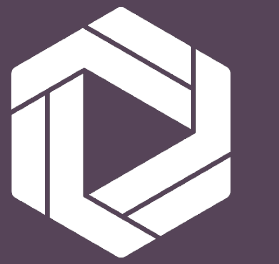


# Code Belly: Navigating Obstruction, ACS, and Arrest with a Scalpel in the ED

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## Introduction

- ❖ Abdominal compartment syndrome (ACS) consists of elevated intraabdominal pressure of >20 mmHg with organ dysfunction [1].
- ❖ ACS has an incidence of 1-14% and causes include SBO, trauma, and large volume resuscitation [1].
- ❖ ACS has an average mortality rate of 30-60%, varying based on time to intervention and patient-specific factors [2]

## Case Description

42-year-old male with recent history of a Nissen fundoplication presenting to the ED with **acute abdominal pain** and **distension** for the past hour.

## ED Course

### 1 Initial Presentation

#### History

- ❖ Patient reported abdominal pain & distension about an hour following dinner. Also reported chest pain & nausea. Had a bowel movement the hour prior to arriving to the ED. PMH notable for a Nissen fundoplication for hiatal hernia repair about 4 months prior.

#### Vitals & Physical Exam

- ❖ Tachycardia, normotensive, afebrile
- ❖ Moderate distension of the abdomen

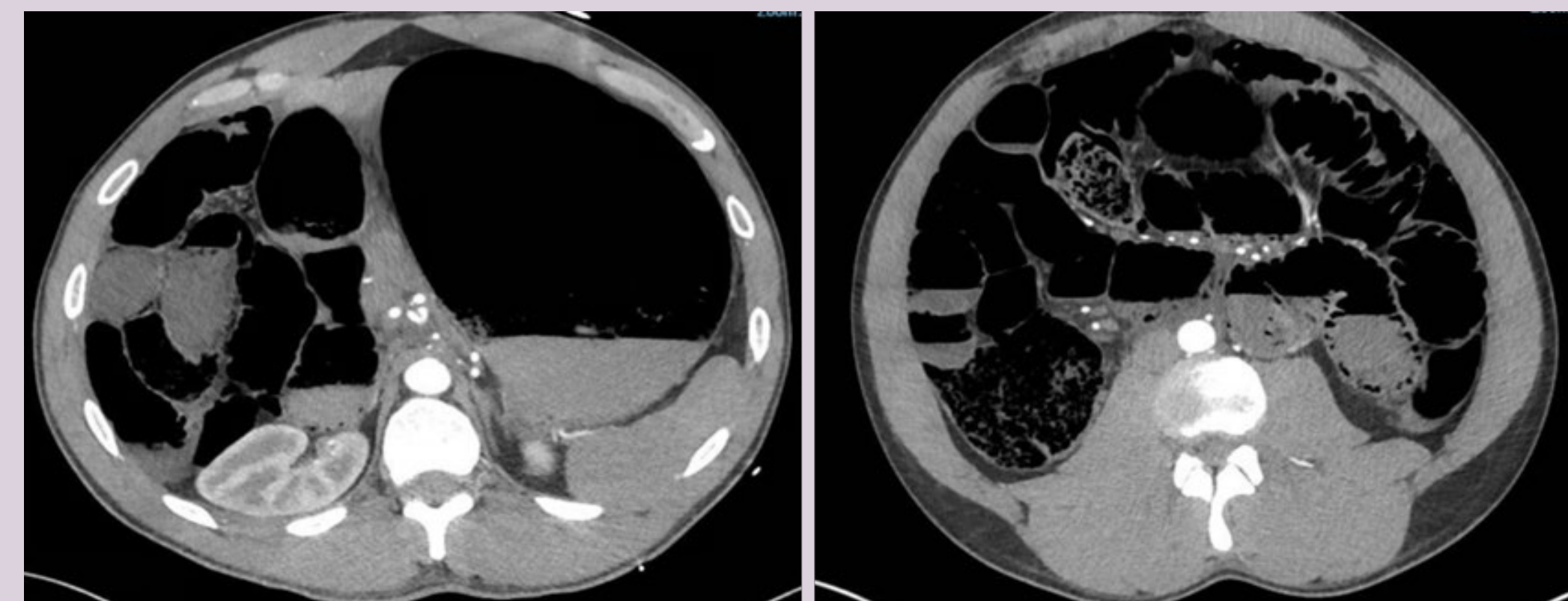
#### ED Course

- ❖ Immediately transported to CT.
  - ❖ CT showed mechanical SBO.
- ↓
- ❖ General surgery was consulted for evaluation & management.
  - ❖ NG tube placement was attempted 5x without success.

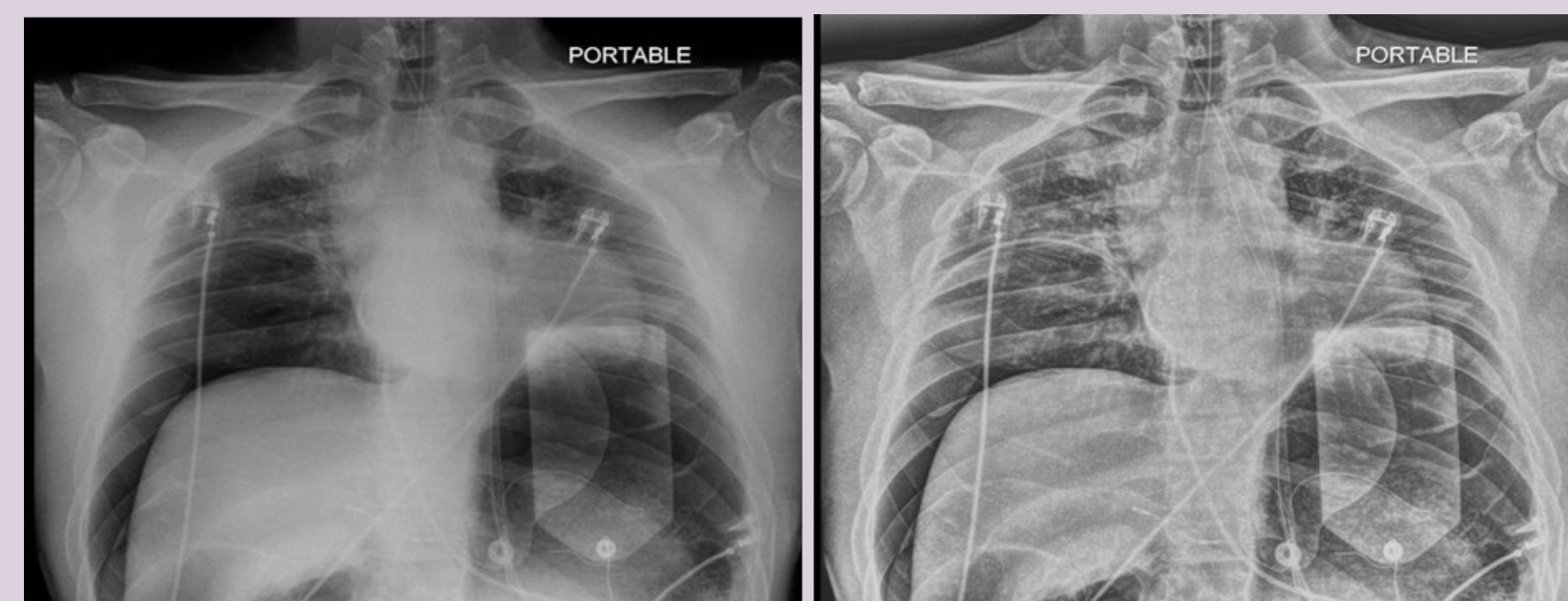
#### Differentials

Small Bowel Obstruction, Volvulus, Mesenteric Ischemia, Pancreatitis, Ruptured AAA, Bowel Perforation

### 2 ED Imaging and Labs



**Figure 1.** CT abdomen/pelvis showing significant distention of stomach and small intestine suggestive of SBO. Pneumatosis intestinalis present.



**Figure 2.** Chest x-rays for NG tube placement show coiling of NG in distal esophagus. Bilateral hemidiaphragm elevation with concerns for pneumoperitoneum and bowel rupture.

#### Labs

- ❖ WBC 12.4 K
- ❖ Lactic Acid 2.0 → 11.0 mmol/L
- ❖ pH 7.44 → 6.80
- ❖ HCO<sub>3</sub> 23.2 → undetectable
- ❖ Lipase 1000 u/L

## Take-Home Points

- ❖ Early recognition of abdominal compartment syndrome is imperative to increasing survival in these patients.
- ❖ Symptoms of ACS include: **severe abdominal pain, distension, pale extremities, oliguria, respiratory distress, hypotension**
- ❖ Explore different techniques to pass NG tube if unsuccessful after several attempts.
- ❖ Bedside surgical decompressive maneuvers can be performed in ED for emergent cases.

## Discussion & Learning Points

### Warning Signs of Abdominal Compartment Syndrome

- ❖ Presents w/ severe abdominal distension & pain
- ❖ Tympanic & rigid abdomen on exam
- ❖ Vitals: hypotension, tachycardia, tachypnea
- ❖ Labs: leukocytosis, elevated lactate, and elevated creatinine or LFTs [3]
- ❖ X-rays or CT imaging can show elevated diaphragm, dilated bowel, free air [4]
- ❖ IAP>20 mmHg (measure by catheter) [4]

### ED Treatment of Abdominal Compartment Syndrome

- ❖ NG and rectal tube decompression [5]
- ❖ IV fluids and/or vasopressors if hypotensive [5]
- ❖ Surgical decompression if conservative interventions have failed. Xiphoid-pubic laparotomy can be performed at bedside in emergent cases such as peri-arrest [6].

### Difficultly placing an NG tube on a patient?

#### NG Tube Complication Causes

- ❖ Equipment Coiling
- ❖ Anatomical Obstructions (strictures, diverticula, mass)
- ❖ Neuromuscular Conditions
- ❖ Gag Reflex or Oropharyngeal Intolerance

#### NG Tube Placement Techniques

- ❖ SORT Maneuver: Sniffing position, orientation, rotating 45 degrees, twisting motions [7]
- ❖ Reverse Sellick maneuver [8]
- ❖ Head flexion with lateral neck pressure [8]
- ❖ Stylet assisted NG tube placement [9]
- ❖ Frozen NG tube method [10]

## References

Given Upon Request

