



"I think I caught the stomach flu"



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Anthony's case

Anthony, 50, presents to the ED with a 3 to 4 day history of nausea, vomiting and abdominal distension. His vomitus is described as foul smelling and very dark brown. It is projectile and has occurred 5 to 10 times per day for the last 3 days.

History

Anthony's history shows there is no hematemesis, fever or chills and his last bowel movement was today. It was soft, with no blood. He has much flatus. His abdominal pain is crampy in nature.

He has lost approximately 15 lbs over an unknown period of time.

A review of his systems is otherwise negative.

Anthony does have sick contacts as both of his children had the "stomach flu" on the weekend.

He has a past medical history of asthma and high BP. He has had an inguinal hernia repair. Of note, his father died of colon cancer at 30-years-of-age.

Examination

Anthony's vitals are as follows:

- Temperature: 36.6°C
- BP: 109/88 mmHg
- Heart rate: 110 bpm
- Respiratory rate: 18 breaths per minute
- Saturation: 99% on room air
- No icterus; however, mucous membranes are dry
- Abdomen is distended, diffusely tender, with active bowel sounds
- No Murphy's sign or McBurney's tenderness

Questions & Answers

1. What is the differential diagnosis?

Possible differential diagnoses for Anthony's symptoms include:

- Small bowel obstruction
- Large bowel obstruction
- Gastroenteritis

2. What are the common symptoms and history in bowel obstruction?

Common history and presenting symptoms of bowel obstruction include:

- Pain which may be crampy and intermittent. Constant pain may mean strangulated or ischemic bowel
- Nausea with or without vomiting (this is more common with proximal obstructions)
- Diarrhea (an early finding) or constipation (a late finding) with the absence of flatus or bowel movements
- Fever, tachycardia and/or hypotension are generally late signs and may be associated with bowel strangulation and ischemia
- Previous abdominal or pelvic surgery and/or previous radiation therapy
- Previous medical history: malignancy (particularly ovarian and colonic)



Figures 1 a and b. Abdominal x-rays showing marked gas and fluid distension of small bowel loops within the abdomen, the appearance being that of a marked mechanical small bowel obstruction.

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3. What are the most common causes of obstruction?

The most common etiologies are:

- Adhesions (usually secondary to previous abdominal surgery)
- Abdominal mass
- Inflammatory bowel disease (e.g., Crohn's disease and/or ulcerative colitis)
- Hernias
- Adynamic bowel (Ogilvie's syndrome): the cessation of peristalsis due to a physiologic insult to the bowel causes flow through the bowel (or a segment thereof) to cease

Bowel obstruction can be categorized in several ways:

- Large bowel vs. small bowel obstruction
- Partial vs. complete obstruction
- Simple (*i.e.*, nonstrangulated) vs. strangulated

4. What pathophysiology results from bowel obstruction?

Proximal dilatation of intestine occurs due to the accumulation of GI secretions and swallowed air. The bowel dilatation stimulates cell secretory activity resulting in more fluid accumulation. This then leads to increased peristalsis above and below the obstruction, with frequent loose stools and flatus early on in the bowel obstruction presentation.

Vomiting occurs if the level of obstruction is proximal. Increasing small-bowel distention leads to increased intraluminal pressures which can cause compression of mucosal lymphatics, leading to bowel wall lymphedema.

Very high intraluminal hydrostatic pressures and increased hydrostatic pressure in the capillary beds result in massive third spacing of fluid, electrolytes and proteins into the intestinal lumen. Third spacing can lead to increased morbidity and mortality.

Take-home message

- Nasogastric tube decompression is warranted if the patient has been vomiting, in order to prevent aspiration and to decompress the stomach
- If unsure and a radiologist is available, review abdominal x-rays
- Ensure early consultation/assessment
- Small bowel obstruction can appear in a virgin belly
- Beware of cancer

5. *What investigations will you order?*

Investigations to order are:


- Abdominal x-rays (Figure 1 a and b). Assess air fluid levels and look for the presence of intestinal distension and/or free air
- Laboratory investigations
- Complete blood count
- Blood urea nitrogen, electrolytes and creatinine (to assess severity of dehydration and electrolyte imbalance)

6. *How will you manage Anthony and when does he require further intervention?*

Managing Anthony requires that you perform IV fluid rehydration, which includes normal saline 1 L bolus, then 150 cc/hour. Frequently reassess the patient's fluid status. Use 25 mg to 50 mg of IV diphenhydramine q.6.h. to manage his nausea. If he is able to tolerate oral fluids (and in equivocal cases) you may wish to watch the patient and see if the symptoms resolve spontaneously.

If Anthony's abdominal pain worsens and he is no longer able to tolerate oral fluids, or continues to vomit despite medical management and the administration of IV fluids, he needs further intervention.

If any patient deteriorates following these measures, other possible interventions include:

- further aggressive fluid rehydration,
- nasogastric tube insertion to decompress the abdomen and to decrease the chance of aspiration,
- repeat x-rays to monitor for changes,
- antibiotics to cover gram-negative and anaerobic organisms may be considered, usually after consultation with a surgeon and finally
- consultation with general surgery. 

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