EM CASE OF THE WEEK.
BROWARD HEALTH MEDICAL CENTER
DEPARTMENT OF EMERGENCY MEDICINE

BROWARD HEALTH
Care Warriors

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Small Bowel Obstruction

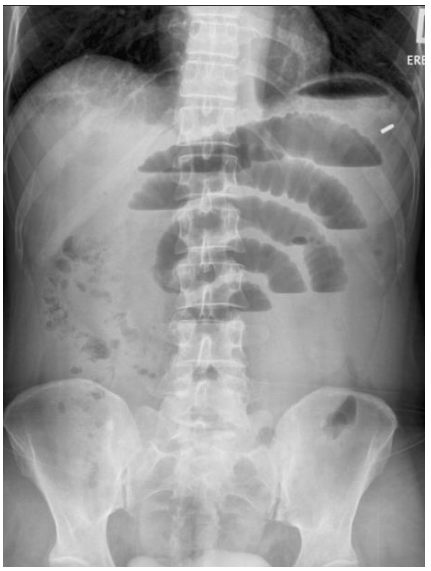
A 70 year old woman presents with a 1 day history of crampy abdominal pain, nausea, vomiting, obstipation, anorexia, and abdominal distention. She has a history of Crohn's disease and recently diagnosed colon cancer. Her only surgical history is an appendectomy. On physical exam she is distended and an incisional scar is noted at McBurney's point. A large inguinal hernia is also noted in the right groin. After further workup the patient is diagnosed with a mechanical small bowel obstruction. Of her many risk factors for SBO, which causes the most SBOs in developed countries?

A: Inflammatory bowel disease

B: Colon cancer

C: Previous abdominal surgery

D: Presence of a hernia



Classic upright abdominal plain radiograph showing findings of a small bowel obstruction: distended proximal loops of bowel with air fluid levels and compressed, gasless distal bowel.

EM Case of the Week is a weekly "pop quiz" for ED staff.

The goal is to educate all ED personnel by sharing common pearls and pitfalls involving the care of ED patients. We intend on providing better patient care through better education for our nurses and staff.

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Correct Answer: C Previous Abdominal Surgery.

Post-operative adhesions are by far the most common cause of SBO in developed countries. SBOs due to adhesions account for more than 300,000 operations per year in the US.

Introduction

Acute mechanical SBO is common surgical emergency. It occurs when the normal flow if intraluminal contents is interrupted. The cause can be extrinsic (ie adhesions) or intrinsic (intraluminal neoplasm). The obstruction leads to proximal dilation of the bowel. As the bowel dilates it becomes edematous, its absorptive function is lost, and more fluid is sequestered into the lumen. If the process continues, blood flood to the bowel is compromised is ischemia, necrosis, and bowel perforation can occur.

Risk Factors: Prior abdominal or pelvic surgery, existing hernia, intestinal inflammation, intestinal neoplasm, prior abdominal or pelvic radiation, foreign body ingestion.
Adhesions are by far the most common cause of SBO in developed countries. Adhesions alone lead to over 300,000 laparotomies per year in the US.

Presentation

Acute onset of abdominal pain, nausea, vomiting, obstipation, anorexia, and abdominal distention. The abdominal pain is often described as periumbilical, cramping, and occurring every 4-5 minutes. All of the symptoms vary depending on the location (proximal vs distal) and the severity (complete SBO vs partial SBO). Hyper acute onset of severe abdominal pain associated with SBO may indicate intestinal perforation.

Physical Examination

A hallmark of SBO is dehydration leading to tachycardia, orthostatic hypotension, reduced urine output, and dry mucus membranes. **Inspection** of the abdomen will frequently reveal abdominal distention. It is also important to take note of surgical scars as post-operative adhesions are the most important risk factor for SBO. **Auscultation** may reveal decreased bowel sounds, or the characteristic high pitched "tinkling" sounds associated with SBO. **Percussion** may reveal hyper resonance or tympany throughout the abdomen, however the proximal loops of bowel will be fluid filled and dull to percussion. Tenderness to light percussion indicates peritonitis. **Palpation** of the abdomen may elicit some pain, but typically not peritoneal signs in the absence of bowel rupture. It is also important to access for abdominal wall hernias, groin hernia, and palpable masses to provide clues to the etiology of the SBO. A digital rectal exam should be performed to identify fecal impaction, rectal mass, and gross blood.

Laboratory Studies

Laboratory studies are not specific for the diagnosis of SBO. However several labs are important to identify complications of SBO and provide information as to the etiology. Many complications can arise from an SBO which can be

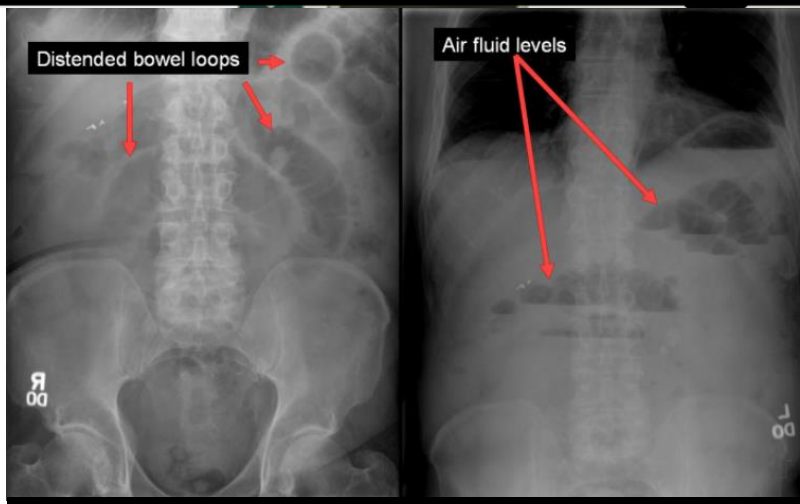
identified via laboratory studies. Leukocytosis, electrolyte abnormalities (mostly hyponatremia and hypokalemia), and anemia can all be complications of SBO and thus a CBC and CMP should be ordered. It is also important to assess for metabolic derangements. Severe vomiting from SBO can result in metabolic alkalosis, but ischemic bowel from a SBO will result in metabolic acidosis. If the patient presents with systemic signs (fever, tachycardia, hypotension, AMS) an ABG, serum lactate, and blood cultures become important.

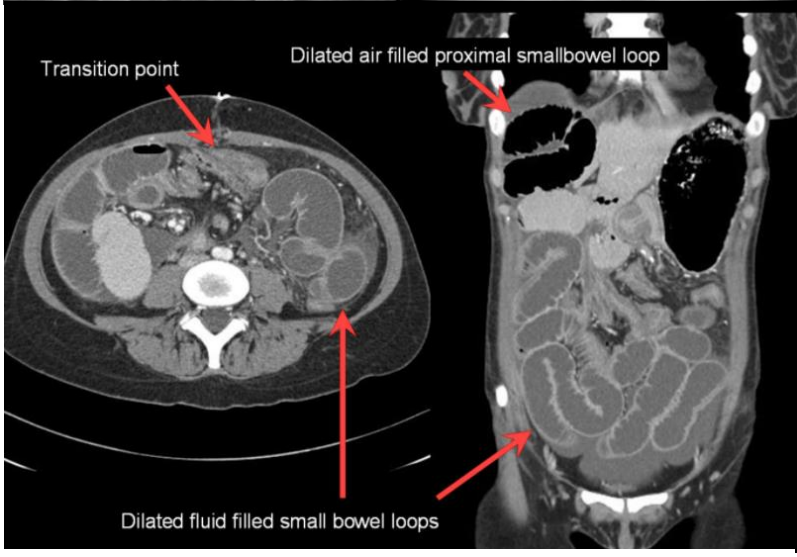
Imaging

Symptomatology, risk factors, and a thorough physical exam frequently make the diagnosis of SBO obvious. Imaging is used to confirm the diagnosis, give an exact location, assess the severity, and identify the etiology. Plain films and CT are the best imaging modalities for SBO.

Treatment

Patients without indication for emergency surgery can undergo a trial of conservative management which can consist of nasal gastric tube decompression, NPO diet, serial abdominal exams, laboratory studies, repeat imaging, and gastrografin challenge. Depending on the severity and etiology of the obstruction as well as the response to conservative management, many patients will still require definitive management in the operating room.





About the Author

William Isom is an MS4 at Florida International University HWCOM. surgery residency training following graduation from medical school.

Reference

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