

Bedside Ultrasound for the Diagnosis of Small Bowel Obstruction

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Video Link: <https://youtu.be/VNsSjVsV9vI>

History of present illness: An elderly female with no history of prior abdominal surgeries presented to the emergency department (ED) with acute onset of abdominal pain and distention. Upon arrival, she began having large volume bilious emesis. While waiting for a computed tomography (CT) scan of her abdomen and pelvis, a point of care ultrasound (POCUS) was performed which showed evidence of a small bowel obstruction (SBO). The patient had a nasogastric tube placed that put out over two liters of bilious contents. A subsequent CT scan confirmed the diagnosis of SBO from a left inguinal hernia and the patient was admitted to the surgical service.

Significant findings: The POCUS utilizing the low frequency curvilinear probe demonstrates fluid-filled, dilated bowel loops greater than 2.5cm with to-and-fro peristalsis, and thickened bowel walls greater than 3mm, concerning for SBO.

Discussion: Gastrointestinal obstruction is a common diagnosis in the ED, accounting for approximately 15% of all ED visits for acute abdominal pain.¹ SBO accounts for approximately 80% of all obstructions.² In the diagnosis of SBO, studies show that abdominal x-rays have a sensitivity of 66-77% and specificity of 50-57%,³ CT scans have a sensitivity of 92% and specificity of 93%,⁴ and ultrasound has a sensitivity of 88% and specificity of 96%.⁵

While CT scan remains a widely accepted modality for diagnosing SBO, ultrasound is more cost effective, well tolerated, does not involve ionizing radiation, and can be done in a timely manner at the patient's bedside. Ultrasound can also identify transition points as well as distinguish between functional and mechanical obstruction.⁶ In addition to SBO, ultrasound can be used to diagnose external hernias, intussusception, tumors, superior mesenteric artery (SMA) syndrome, foreign bodies, bezoars, and ascariasis.⁷

Topics: Small bowel obstruction, ultrasound, point of care ultrasound, POCUS.

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