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Evaluation & Management of a Patient with Small Bowel Obstruction

Description of the Activity	General surgeons encounter patients with small bowel obstruction (SBO) in the emergency department, inpatient, and outpatient settings. They are expected to manage or assist with the management of adult and pediatric patients presenting with SBO due to any etiology.
Functions	❖ Nonoperative/Preoperative ➢ Elicit clinical information from referring providers or patients who present with signs and symptoms of SBO. Perform a focused history and physical exam, including an assessment of pertinent positive and negative signs and symptoms of risk factors, such as a history of Crohn's disease or cancer or prior abdominal surgery. ➢ Recognize the urgency of consultation and the level of care required, with particular attention to the potential for ischemic bowel (eg, closed-loop obstruction). ➢ Initiate resuscitative measures to correct or prevent physiologic derangements. ➢ Determine the need for gastrointestinal decompression, and discuss the risks and efficacy of nasogastric tube placement for decompression. ➢ Order guideline-concordant imaging as indicated for the evaluation of SBO (Eastern Association for the Surgery of Trauma). ➢ Identify patients meeting the criteria for a nonoperative approach to SBO. ➢ Collaborate with the consulting service regarding the possible need for patient transfer (setting or service) and additional imaging, and discuss management recommendations. ➢ Identify patients requiring surgical intervention, including those presenting with closed-loop SBO who require urgent surgical management. ➢ Tailor management of bowel obstruction in alignment with overall goals of care (eg, associated with end-of-life conditions). ➢ Obtain informed consent with cultural humility. ▪ Describe the indications, risks, benefits, alternative therapies, and potential complications of the planned procedure, and incorporate a discussion of the goals of care. ▪ Ensure patient/caregiver comprehension using applicable language services and audio/visual aids. ▪ Ensure that the patient/caregiver(s) can ask questions, and address any expressed concerns, taking patient/caregiver preferences into account. ▪ Document the consent discussion. ❖ Intraoperative ➢ Manage the perioperative environment, including room setup, equipment check, preprocedural time-out, specimen processing, counts, wound classification, and debriefing functions. ➢ Synthesize an operative plan that demonstrates understanding of the operative anatomy, physiology, indications, contraindications, risks, benefits, alternatives, and potential complications. ▪ Discuss an operative approach to SBO based on clinical and radiographic findings. ▪ Manage SBO due to adhesions. ▪ Manage closed-loop SBO. ▪ Manage internal hernia after Roux-en-Y gastric bypass, including closing mesenteric defects.

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	▪ Perform open and minimally invasive adhesiolysis. ➢ Perform operative interventions required to manage SBO secondary to adhesions. ▪ Safely enter the reoperative abdomen. ▪ Perform blunt and sharp adhesiolysis (identification of tissue planes). ▪ Assess bowel viability, and determine when resection is indicated. ▪ Decide whether to perform temporary or definitive abdominal wall closure. ➢ Integrate new information discovered intraoperatively to modify the surgical plan/technique as necessary, such as: ▪ Deciding when to leave a patient's small bowel in discontinuity with further resuscitation and reevaluation ▪ Decision-making in the setting of massive loss of small bowel and survivability ▪ Management of a frozen abdomen ▪ Management of an internal hernia after Roux-en-Y gastric bypass (Petersen defect between the antecolic jejunum and colon, jejunojejunostomy mesenteric defect) ▪ Management of inadvertent enterotomy ▪ Management of serosal injury ➢ Partner with the anesthesia team, nursing staff, and other perioperative health care professionals to create and maintain an intraoperative environment that promotes patient-centered care. ❖ Postoperative ➢ Identify and manage postoperative complications. ▪ Electrolyte disturbances/high-output stoma ▪ Need for postoperative nutritional support ▪ Prolonged postoperative ileus/early postoperative obstruction ▪ Surgical site infection/postoperative fasciitis or dehiscence ▪ Unrecognized enterotomy/postoperative enteric fistula or intra-abdominal abscess ❖ Communicate with the patient/caregiver(s) and members of the care team (primary care provider, nursing staff, other health care providers) to ensure an understanding of preprocedure and postprocedure instructions and the ability to carry out the resultant plan within the context of the patient's social situation (transportation, living situation, insurance, access to a pharmacy).
Scope	❖ In scope ➢ Initial evaluation and management of all adult patients and pediatric patients older than 5 years presenting with SBO ➢ Intraoperative management of SBO secondary to adhesive disease ❖ Out of scope ➢ Pediatric patients younger than 5 years

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1 **Limited Participation** Demonstrates understanding of information and has very basic skills **Framework:** What a learner directly out of medical school should know The attending can show and tell.	• Obtains an H&P with cultural humility and identifies SBO in a patient; develops a differential that includes hernia or adhesions but may need assistance considering closed-loop obstruction or internal hernia (MK1 L1; PC1 L1) • Initiates fluid resuscitation and correction of electrolyte or acid-base derangements but may require guidance; considers the use of an NG tube but is uncertain when it is indicated or its associated risks (eg, incorrect placement, dislodgement, clogging, increased risk of aspiration, tube dysfunction) (MK1 L1) • Respectfully communicates the basic plan for initial management to a patient/caregiver(s) but inconsistently uses applicable language services and audio/visual aids (ICS1 L1) • If an operation is indicated, communicates the elements of an informed consent discussion but omits some elements when documenting the discussion (PROF1 L1)	• Identifies a common abdominal wall hernia but does not evaluate for an internal hernia (MK1 L1) • Needs prompting for basic room setup and steps to enter the abdomen, such as a midline laparotomy with careful entrance into the peritoneal space to avoid injury of dilated bowel and, in the reoperative setting, entrance into an undissected plane, identifying when a laparoscopic approach is potentially safe (PC3 L1) • Identifies adhesions and tissue planes with guidance and retraction but needs the supervisor to guide the entire adhesiolysis (PC3 L1) • Centers the operative field (anatomy and instruments) with the camera with frequent adjustments and reminders (PC3 L1) • Displays coordinated hand movements for simple maneuvers, though inefficiently and under direct instruction (PC3 L1)	• Identifies signs and symptoms of common postop complications such as ileus, infection, or bleeding, requiring guidance to manage them (PC4 L1) • Demonstrates basic knowledge of treatment strategies for common complications encountered in patients treated for SBO (eg, managing electrolyte abnormalities, minimizing opiate use) (PC4 L1) • Provides updates to a patient/caregiver(s) regarding progress with SBO (ICS1 L1)
2 **Direct Supervision** Demonstrates understanding of the steps of the operation but requires direction through principles and does not know the nuances of a basic case	• Evaluates a patient with SBO and interprets imaging (identifies ischemic bowel, pneumatosis, thickened bowel wall, intra-abdominal fluid, transition point) (PC1 L2) • Initiates resuscitation when it is needed, including addressing electrolyte and acid-base derangements (MK1 L2; PC1 L2) • Demonstrates knowledge of the significance of prior surgery but may	• Demonstrates understanding of anatomic and acquired findings that may be encountered intraoperatively during an abdominal exploration for SBO (MK1 L2) • Requires prompting to determine the need for bowel resection or repair of serosal injury once adhesiolysis is complete (PC3 L2) • Actively retracts and assists during the procedure and identifies some structures (PC2 L2)	• Engages with a patient/caregiver(s) to ensure they understand short- and long-term care for an ostomy, fistula, or wound (ICS1 L2) • Initiates management for a common postop complication such as ileus, infection, or bleeding (PC4 L2)

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Framework: The learner can use the tools but may not know exactly what, where, or how to do it. The attending gives active help throughout the case to maintain forward progression.	need assistance identifying a closed-loop SBO or internal hernia on imaging (PC1 L2) • Nonoperatively manages a patient with presumed partial SBO or ileus without urgent surgical indication, including using a GGF challenge consistent with guidelines and demonstrating the ability to manage the NG tube and safely advance the diet (PC1 L2) • Respectfully communicates basic facts about the diagnosis to a patient/caregiver(s) and uses applicable language services and audio/visual aids (ICS1 L2) • Verbalizes consideration for nonoperative management of malignant obstruction causing SBO and engages the palliative care team; requires assistance to engage the patient/caregiver(s) in shared decision-making (PROF1 L2)	• Performs basic surgical tasks such as tying mesenteric vessels and deploying the linear stapler with instruction (PC2 L2) • Demonstrates some coordination of instruments but tissue handling is inconsistent with both hands, especially laparoscopically; needs frequent adjustments of the camera to triangulate instruments (PC2 L2) • Proceeds tentatively with adhesiolysis and has difficulty consistently identifying tissue planes, requiring redirection to avoid serosal injury or enterotomies (PC3 L2) • Demonstrates understanding of the impact of prior incisions and dilated bowel on port placement (PC3 L2) • Assesses bowel viability before closure (PC3 L2)	
3 **Indirect Supervision** Can do a basic operation but will not recognize abnormalities and does not understand the nuances of an advanced case **Framework:** The learner can perform the operation in straightforward circumstances.	• Develops a plan for managing a healthy patient with SBO and identifies when surgical intervention is required (PC1 L3) • Recognizes imaging findings of possible internal hernia or closed loop obstruction (eg, swirl sign, decompressed proximal and distal bowel) (PC1 L3) • Identifies when a patient's clinical condition changes with SBO (eg, concern for ischemic bowel) and adapts the management plan accordingly (MK1 L3; PC1 L3) • Respectfully communicates the medical condition of an uncomplicated patient	• Demonstrates knowledge of post–R-Y gastric bypass anatomy and the need to explore for internal hernia (MK1 L3) • Consistently demonstrates careful tissue handling when mobilizing small bowel and releasing adhesions (PC3 L3) • Identifies tissue planes; identifies and dissects relevant normal anatomy (PC3 L3) • Demonstrates understanding that when serosal injury is extensive, resecting the affected bowel is the best option (PC3 L3) • Safely places ports, treats a single-band adhesion, and runs the small bowel laparoscopically (PC3 L3)	• Identifies and manages postop problems in a patient with SBO and a complex condition (eg, kidney failure, CHF, cirrhosis) (PC4 L3) • Manages the postop course of a patient (with assistance as needed) and engages other specialty services as indicated for postop management of complex findings (eg, cancer, IBD) (PC4 L3) • Engages in shared decision-making with a patient/caregiver(s) regarding

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The attending gives passive help. This help may be given while scrubbed for more complex cases or during a check-in for more routine cases.	across barriers (eg, literacy, language, and cultural differences) to elicit a personalized care plan, using shared decision-making and teach-back to ensure understanding (ICS1 L3) • Seeks assistance to manage a patient with SBO secondary to a frozen abdomen or malignant obstruction (PROF1 L3)	• Identifies bowel that is not viable and should be resected (PC3 L3) • Moves the operation forward and discerns when sufficient adhesiolysis has been achieved to relieve the SBO (PC3 L3)	long-term care plans in the setting of SBO and a frozen abdomen or malignant obstruction (ICS1 L3)
4 **<u>Practice Ready</u>** Can manage more complex patient presentations and operations and take care of most cases **<u>Framework</u>:** The learner can treat all SBOs and has a strong understanding of surgical options and techniques for less common scenarios. The supervisor is available at the request of the learner but is not routinely needed for common presentations, though input may be needed for more complex presentations.	• Demonstrates comprehensive knowledge of the various presentations of SBO and identifies unique populations (patients with prior R-Y gastric bypass, closed-loop SBO, Crohn's, or malignant obstruction) that impact nonoperative and operative treatment decision-making (MK1 L4) • Synthesizes all information to develop a plan to manage a complex patient with SBO, identifying the dynamic nature of SBO, when the plan needs to be adjusted, and the need to engage other specialists (MK1 L4; PC1 L4) • Identifies the potential need for immune-modulating medication in a patient presenting with Crohn's and SBO (MK1 L4) • Facilitates difficult conversations with a patient/caregiver(s) in the setting of SBO with a frozen abdomen or malignant obstruction and engages the palliative care team or an ethics consult as indicated (ICS1 L4; PROF1 L4)	• Assesses bowel viability and makes decisions regarding restoration of intestinal continuity and abdominal closure based on intraoperative findings, including hemodynamic stability (MK1 L4) • Manages complex findings such as internal hernia (eg, Petersen, foramen of Winslow), malignant obstruction, enterotomy, and frozen abdomen (PC3 L4) • Demonstrates careful tissue handling and avoids injury in an open or MIS approach (PC3 L4) • Performs a complex lap adhesiolysis and identifies when to convert to an open procedure for failure to progress (PC3 L4)	• Independently identifies, differentiates, and manages complex postop complications such as ileus, early postop bowel obstruction, fistula formation, anastomotic failure, fascial dehiscence, and ostomy dysfunction (PC4 L4) • Communicates with a patient/caregiver(s) and members of the health care team with cultural humility regarding complications, long-term care needs for an ostomy or fistula, or palliation as indicated (ICS1 L4)