

Sbo

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THE STORY IN ONE SENTENCE

Something is blocking the small bowel, so nothing can squeeze past it.

“The small bowel is plugged by a scar, hernia, or twist — the loop above swells, and if the twist chokes off blood, the tissue dies.”

Normal anatomy — the body's job

The small bowel is a long, coiled tube (about 20 feet in an adult) that runs from the stomach to the colon. Smooth muscle in its wall squeezes in slow, rhythmic waves (peristalsis) to push partly digested food, water, and waste steadily forward — like squeezing toothpaste through a tube.

BODY'S JOB

As food moves through, the small bowel absorbs water, nutrients (sugars, fats, proteins, vitamins), and minerals into the bloodstream. Gas that forms or is swallowed moves along and gets absorbed or passed. The bowel wall stays flexible and pink because tiny blood vessels (capillaries) feed it oxygen and fuel. Normally nothing blocks the path, so everything flows smoothly from stomach to colon, and you do not vomit or bloat.

1. Stomach empties partly digested food into the first part of the small bowel (duodenum).
2. Smooth muscle in the bowel wall squeezes in waves (peristalsis), pushing the mixture forward through the jejunum and ileum (the middle and end sections of the small bowel).
3. The lining of the bowel absorbs water, nutrients, and salts into tiny blood vessels in the wall.
4. Gas moves forward with the flow and either gets absorbed or passes into the colon.
5. Waste reaches the colon, where more water is absorbed, and eventually stool is formed and passed.
6. The bowel wall stays pink and healthy because blood flows freely through the mesenteric arteries (the vessels that feed the bowel).

What breaks

Something — a scar, a hernia, a tumor, or a twist — blocks the small bowel so nothing can squeeze past. The loop above the block swells up with food, fluid, and gas. If the block also twists the bowel or traps it in a tight space, the blood vessels get pinched and the tissue starts to die.

CLINICAL TERM

Small bowel obstruction (SBO). The bowel lumen (the open tube inside) is blocked. The most common cause in adults is adhesions (scar tissue bands from prior abdominal or pelvic surgery that kink or squeeze the bowel shut). Other causes include incarcerated hernia (a loop of bowel gets stuck in a weak spot in the abdominal wall and cannot slide back), tumor (cancer or benign growth pressing or growing into the bowel), intussusception (one segment of bowel telescopes into the next), volvulus (the bowel twists on its mesentery, the sheet of tissue that carries its blood vessels), gallstone a stalled gut (ileus) (a large gallstone erodes through the gallbladder into the bowel and gets stuck), and Crohn disease stricture (chronic inflammation narrows the bowel). Proximal to (above) the obstruction, the bowel dilates with fluid, gas, and undigested food. If the obstruction is closed-loop (both ends of a segment are blocked) or strangulated (the twist or hernia pinches the mesenteric vessels), blood flow is cut off, the bowel wall becomes blood-starved (ischemic) (starved of oxygen), and tissue death from blocked blood flow (infarction) (tissue death) follows. Dead bowel can perforate (break open), spilling bacteria and stool into the peritoneal cavity and causing peritonitis and sepsis.

How the body compensates

The body tries to empty the bowel backward (vomiting), squeezes harder to push past the block, and shifts fluid around to keep blood pressure up. Early on, vital signs can look stable even though the bowel is swelling and starting to die. The job is to catch the danger before the bowel perforates or the patient crashes into shock.

1. {'step': 'The bowel squeezes harder and more often (hyperactive bowel sounds, cramping pain) to try to push past the obstruction.', 'why': 'The body's reflex is to increase the gut's squeezing waves (peristalsis) when something is stuck, like trying to unclog a pipe by flushing harder.'}
2. {'step': 'The stomach and proximal bowel trigger vomiting to empty backward.', 'why': 'When forward flow is blocked, the vagus nerve (the main nerve that controls the gut) signals the brainstem vomiting center to reverse the flow and protect the airway from aspiration.'}

3. {'step': 'Fluid shifts out of the bloodstream into the bowel lumen and swollen bowel wall (third-spacing).', 'why': 'Inflammation and pressure open gaps between the cells lining the blood vessels, so water, salt, and protein leak out — the body sacrifices blood volume to try to flush the blockage and dilute irritation.'}
4. {'step': 'The kidneys hold onto salt and water (via aldosterone and ADH) to defend blood pressure.', 'why': 'Dehydration from vomiting and third-spacing drops blood volume, so the kidneys try to keep every drop to maintain circulation.'}
5. {'step': 'Heart rate goes up and blood vessels squeeze down (via adrenaline and noradrenaline from the adrenal glands) to keep blood pressure normal.', 'why': 'The sympathetic nervous system (the body's fight-or-flight wiring) responds to falling blood volume by speeding the heart and narrowing vessels to protect flow to the brain and heart.'}
6. {'step': 'Vital signs can stay stable for hours to days while the bowel is silently dying.', 'why': 'The body's compensatory mechanisms are powerful and can mask how sick the patient really is — this is the dangerous window where the team might miss the slide toward strangulation and perforation.'}
7. {'step': 'The crash point is perforation or septic shock: fever, severe abdominal pain that becomes constant (not crampy), a fast heart rate (tachycardia) (fast heart rate) that does not come down, low blood pressure, high lactate (a waste product that rises when tissue is dying), and signs of peritonitis (rigid, board-like belly, rebound tenderness).', 'why': 'Once the bowel perforates or the blood supply is completely cut off, bacteria flood the bloodstream, the immune system goes haywire (systemic inflammatory response), and organs start to fail.'}
8. {'step': 'Watch the trend, not the snapshot: worsening pain, rising heart rate, climbing lactate, increasing abdominal distension, or new fever — even if blood pressure is still normal.', 'why': 'A stable patient on a downhill slope is not truly stable; early warning signs (rising lactate, persistent a fast heart rate (tachycardia), pain out of proportion to exam) let you intervene before the cliff edge.'}

Domino effect

1. A scar band, hernia, tumor, twist, or stone physically blocks the small bowel. — The obstruction is the upstream break — nothing can pass, so everything above it backs up like a clogged drain.
2. The bowel above the block dilates (swells) with fluid, gas, and undigested food. — The gut's squeezing waves (Peristalsis) keeps squeezing food forward, but it hits a wall and cannot empty, so the loop balloons out like a water balloon filling past its limit.

3. The patient vomits — first food, then bile (yellow-green), then feculent (brown, foul-smelling) fluid if the block is low in the small bowel. — The stomach and proximal bowel are overfilled and cannot push forward, so the vagus nerve triggers reverse flow (vomiting) to try to decompress the system and protect the airway.
4. Dehydration and electrolyte imbalance develop: low potassium, low chloride, metabolic alkalosis (the blood turning too alkaline) (blood becomes too basic). — Vomiting dumps stomach acid (hydrochloric acid, HCl) and potassium into the toilet, and third-spacing (fluid leaking into the bowel wall and lumen) drains water and salt out of the bloodstream.
5. The swollen bowel wall compresses its own blood vessels (the small arteries and veins in the wall), choking off oxygen supply. — As the loop stretches, pressure inside rises and squeezes the capillaries shut — like stepping on a garden hose. If the obstruction is also a volvulus (twist) or incarcerated hernia (tight squeeze), the main mesenteric vessels are kinked from the outside, doubling the starved blood flow (ischemia) (oxygen starvation).
6. The bowel wall becomes blood-starved (ischemic) (purple, swollen, oxygen-starved) and then infarcted (black, dead). — Without oxygen, the cells in the bowel wall die. The tissue turns from pink to purple (ischemia) to black (necrosis, or tissue death) — like frostbite, but from lack of blood instead of cold.
7. Dead bowel perforates (breaks open), spilling bacteria and stool into the peritoneal cavity (the space around the organs in the belly). — Dead tissue cannot hold together; the wall falls apart, and billions of gut bacteria pour into a normally sterile space, triggering massive infection (peritonitis) and septic shock.
8. Peritonitis and sepsis: fever, severe constant abdominal pain, rigid belly, low blood pressure, organ failure. — The immune system goes into overdrive (systemic inflammatory response syndrome, SIRS) trying to fight the infection, but the flood of bacteria and toxins overwhelms it, blood vessels leak, blood pressure drops, and organs (kidneys, lungs, brain) start to fail from poor oxygen delivery.

Symptoms · what the patient feels, and why

- Crampy belly pain that comes and goes in waves: The bowel muscle squeezes hard trying to push food past the blocked spot, like a garden hose kinking and unkinking — each squeeze makes a cramp.
- Throwing up — early (green or yellow) if the block is high in the small bowel, late (brown, foul-smelling) if the block is lower down: Food and liquid pile up above the blockage and have nowhere to go but backwards. High blockages fill the stomach quickly, so vomiting starts fast. Low blockages take longer to back up into the stomach.
- Belly bloating and swelling: Gas and fluid build up in the loops of bowel above the blockage because they cannot move forward, stretching the belly like a balloon.

- No poop and no passing gas: Nothing can make it through the blocked section of bowel, so the exit path is empty — the body stops moving waste out.
- Loud, high-pitched bowel sounds early on (hyperactive bowel sounds): At first, the bowel muscle works overtime, squeezing fast and hard to push past the block. That rushing fluid and gas makes loud squealing or tinkling noises you can hear through a stethoscope.
- Quiet or silent belly sounds later (hypoactive or absent bowel sounds): After hours of squeezing and failing, the bowel muscle gets exhausted and stops moving — a sign that the bowel may be very stretched, injured, or dying.
- History of past belly surgery (especially adhesions from old cuts or infections): Scar tissue (adhesions) from earlier operations can form sticky bands inside the belly that kink or trap a loop of bowel years later — the most common cause of small bowel obstruction in adults.
- Fever and constant, severe belly pain (not crampy): If the bowel wall loses its blood supply (strangulation) or tears (perforation), infection and dying tissue trigger fever and steady, worsening pain — a surgical emergency.

Focused exam

- Crampy belly pain that comes and goes in waves: In SBO, the small bowel squeezes hard to push food past the block, then relaxes, then squeezes again — like wringing out a towel. This on-and-off cramping tells you the bowel is still alive and fighting, not dead yet.
- Vomiting early, sometimes smelling like poop: In SBO, the block stops food from moving down, so it backs up and comes out as vomit. The higher the block, the earlier the vomiting. Fecal-smelling vomit (like poop) happens when bacteria in the backed-up food start breaking it down — it means the backup is real and has been there a while.
- Belly bloating and swelling (distension): In SBO, gas and liquid pile up above the block because they cannot move past. The bowel fills like a balloon. The more swollen the belly, the longer the block has been there.
- Loud, high-pitched bowel sounds early; quiet or silent sounds later: In SBO, early loud sounds (like tinkling or rushing water) mean the bowel is squeezing hard to fight the block. Later, silence means the bowel is exhausted and giving up — a danger sign that tissue may be dying.
- No stool or gas passing for more than a day: In SBO, nothing can move past the block, so poop and gas are stuck upstream. This is the hallmark of obstruction — the pipe is clogged, so nothing comes out the other end.
- Old belly scar or bulge (hernia) you can see or feel: In SBO, scars from old surgery cause tissue bands (adhesions) that twist or pinch the bowel — the number-one cause of SBO. A hernia (where bowel pokes through a weak spot in the belly wall) is the number-two cause. Finding the scar or bulge points you to the culprit.

- Dry mouth, low blood pressure, fast pulse, dark urine, sunken eyes: In SBO, repeated vomiting drains the body of water and salt (dehydration). These signs — dry skin, fast heartbeat, low pressure, and concentrated urine — tell you the tank is running low and the patient needs IV fluids right away.

Diagnostics · every test answers a question

- Upright abdominal X-ray (KUB: kidney, ureter, bladder) → Is the small bowel swollen with air and fluid, and is the colon flat or empty?
- CT abdomen/pelvis with IV contrast (oral contrast often skipped in acute setting) → Where is the block, what caused it, and is the bowel dying?
- Basic metabolic panel (BMP: sodium, potassium, chloride, CO₂, creatinine, glucose) → Is the patient dehydrated, and are electrolytes dangerously out of balance?
- Complete blood count (CBC) → Is there infection or tissue death?
- Lactate (serum lactic acid) → Is the bowel dying right now?
- Water-soluble contrast study (Gastrografin by mouth or NG tube) → Will the block heal on its own with rest, or does it need surgery?

Treatment logic

- NPO (nothing by mouth) + nasogastric (NG) tube decompression → The NG tube is a thin tube through the nose into the stomach that sucks out backed-up fluid and air. This shrinks the swollen bowel, stops vomiting, and takes pressure off the block. For partial SBO (some stuff still passing), this rest can let adhesions relax and the block heal on its own.
- IV fluids (normal saline or lactated Ringer's) + electrolyte replacement (potassium chloride, sodium chloride) → Replaces the water and salt that vomiting stripped away. This restores blood pressure, fixes heart rhythm (low potassium can cause dangerous beats), and gets the kidneys working again. The bowel also needs water to heal.
- Water-soluble contrast (Gastrografin) by mouth or NG tube → Diagnostic and therapeutic: it shows on X-ray whether contrast moves through (partial block) or stops (complete block). The high salt in Gastrografin also pulls water into the bowel, which can loosen adhesions and help a partial block resolve. If contrast reaches colon in < 24 hours, 80% of patients avoid surgery.
- Surgery (exploratory laparotomy or laparoscopy): lysis of adhesions, hernia repair, bowel resection, or bypass → Physically cuts away scar tissue (adhesions), pushes bowel back through a hernia and patches the hole, removes dead or cancerous bowel, or bypasses a block that cannot be removed. Restores blood flow and bowel passage.

- Pain control (IV opioids like morphine or fentanyl, used carefully) → Relieves severe pain so the patient can breathe and cooperate with care. Pain itself worsens stress and dehydration.
- Treat the underlying cause (chemotherapy for cancer, biologics or steroids for Crohn's stricture, antibiotics for TB) → Shrinks or stabilizes the disease that caused the block in the first place — e.g. chemo shrinks a tumor, anti-inflammatory drugs calm down Crohn's scarring.

Medications

NPO (nothing by mouth) + nasogastric tube decompression · Non-pharmacologic supportive intervention

The bowel is blocked, so food and liquid can't move forward and start to pile up above the blockage like cars behind a highway crash. That buildup stretches the bowel wall, causes pain, triggers vomiting, and raises the pressure so high that blood can't feed the tissue anymore. Stopping all food and drink by mouth (NPO) removes new arrivals. Placing a flexible tube through the nose down into the stomach (nasogastric tube) then sucks out the backed-up fluid and swallowed air, dropping the pressure and letting the bowel wall rest and recover blood flow.

1. Patient takes nothing by mouth, so no new food or liquid enters the blocked system.
2. A nasogastric tube is threaded through the nose, down the esophagus, and into the stomach.
3. Gentle suction pulls out gastric juice, bile, swallowed saliva, and air that have pooled.
4. Pressure inside the bowel drops, the stretched wall relaxes, and blood flow improves.
5. Pain eases, nausea and vomiting stop, and the bowel wall gets the oxygen and nutrients it needs to heal.

SAFETY WATCH

Check that the tube is in the stomach (not the lung) before turning on suction—confirm placement with an X-ray. · Monitor the volume and color of fluid coming out; dark red or coffee-ground material suggests bleeding. · Replace lost fluid and electrolytes through an intravenous line to prevent dehydration and dangerous shifts in sodium, potassium, and chloride. · Watch for fever, worsening pain, or signs of shock (fast heart rate, low blood pressure, confusion), which mean the bowel may be dying and surgery cannot wait.

Intravenous crystalloid fluids (normal saline or lactated Ringer's) · Isotonic crystalloid resuscitation fluid

When the bowel is blocked, the body loses large amounts of water and salt into the backed-up intestine and through vomiting. Blood volume drops, the kidneys get less flow, and cells can't maintain the right balance of sodium, potassium, and chloride. Giving salt water directly into a vein (IV crystalloid) replaces what was lost, refills the blood vessels, restores pressure so organs get fed, and keeps the heart rhythm steady.

1. A bag of sterile salt water—either normal saline (0.9% sodium chloride) or lactated Ringer's (a mix closer to plasma)—is hung and connected to an IV catheter in a vein.
2. Fluid flows into the bloodstream, raising the volume of circulating blood.
3. Blood pressure climbs back toward normal, the heart doesn't have to race as hard, and kidneys receive enough flow to make urine again.
4. Electrolytes in the fluid (sodium, potassium, chloride, and sometimes lactate or bicarbonate) help restore the balance inside and outside cells.
5. As hydration improves, confusion clears, skin springs back when pinched (turgor returns), and urine output picks up.

SAFETY WATCH

Measure input (how much IV fluid goes in) and output (how much urine comes out) every few hours to avoid under- or over-resuscitation. · Check blood tests (basic metabolic panel) to track sodium, potassium, chloride, and kidney function; adjust the type and rate of fluid as needed. · Listen to the lungs and watch for leg swelling or shortness of breath, which signal fluid overload. · If the patient has heart failure or kidney disease, give fluid more slowly and watch even more closely.

Gastrografin (diatrizoate meglumine and diatrizoate sodium oral solution) · Hyperosmolar water-soluble contrast agent

Gastrografin is a thick, salty liquid that shows up bright white on X-rays and CT scans. When a patient with a partial small-bowel obstruction (some fluid can still squeeze past) drinks it, the contrast does two jobs: it maps where the blockage is and—because it is hyperosmolar (much saltier than body fluid)—it pulls extra water from the bloodstream into the bowel lumen through osmosis, like sprinkling salt on a slug. That extra water softens and lubricates the contents, sometimes flushing the obstruction through. Studies show Gastrografin can shorten time to resolution and reduce the need for surgery in adhesive small-bowel obstruction.

1. The patient drinks 100 mL of Gastrografin (or receives it through the nasogastric tube if vomiting prevents swallowing).
2. The hyperosmolar contrast pulls water across the bowel wall into the lumen by osmosis.

3. The bolus of fluid dilutes and softens the backed-up material, increasing pressure downstream.
4. The gut's squeezing waves (Peristalsis) (the wave-like muscle squeezes) can now push the softened contents past the narrowed spot.
5. A follow-up abdominal X-ray 4–8 hours later checks whether contrast has reached the colon; if it has, the obstruction is likely to resolve without surgery.

SAFETY WATCH

Do NOT give Gastrografin if there is suspicion of perforation and the patient is unstable—get a CT first to confirm the bowel is intact. · Do NOT use if the patient cannot protect their airway (altered mental status, severe vomiting) because aspiration into the lungs causes severe chemical pneumonitis. · Use caution in patients with kidney disease or severe dehydration; the hyperosmolar load can worsen kidney function—ensure IV hydration is running first. · Watch for worsening abdominal pain, fever, or signs of peritonitis after giving Gastrografin, which may mean the obstruction has progressed to starved blood flow (ischemia) or perforation and surgery is needed immediately.

Antibiotic therapy (e.g. cefoxitin, piperacillin-tazobactam, or ceftriaxone + metronidazole) · Broad-spectrum antibacterial agents (beta-lactam ± beta-lactamase inhibitor, plus anaerobic coverage)

When a bowel obstruction causes the intestinal wall to stretch and lose blood flow (ischemia), bacteria that normally live peacefully inside the gut can cross the damaged barrier and invade the bloodstream or abdominal cavity, causing infection (bacterial translocation). If the bowel has already torn (perforation) or twisted so tightly that tissue dies (strangulation), bowel contents spill and seed the abdomen with a mix of aerobic (oxygen-loving) and anaerobic (oxygen-hating) bacteria. Broad-spectrum antibiotics kill both types by breaking down their cell walls (beta-lactams) or blocking their ability to make proteins and DNA (metronidazole for anaerobes), preventing sepsis and abdominal abscess.

1. Antibiotic is given intravenously (pills won't absorb if the gut is blocked).
2. The drug circulates in the bloodstream and penetrates into inflamed or blood-starved (ischemic) tissue.
3. Beta-lactam antibiotics (penicillins, cephalosporins, carbapenems) bind to enzymes (penicillin-binding proteins) on bacterial cell walls and punch holes in them; the bacteria swell and burst.
4. Metronidazole or other anaerobic agents disrupt bacterial DNA and stop anaerobes (*Bacteroides*, *Clostridium*) from multiplying.
5. Together, the combination covers the most likely gut organisms—Gram-negative rods (*E. coli*, *Klebsiella*) and anaerobes—and prevents progression to septic shock or abscess.

SAFETY WATCH

Check for penicillin or cephalosporin allergy before giving beta-lactams; if the patient has a severe allergy (anaphylaxis, throat swelling), switch to a fluoroquinolone (e.g. ciprofloxacin) plus metronidazole or a carbapenem if the allergy history is uncertain. · Adjust doses for kidney function—most beta-lactams and metronidazole are cleared by the kidneys and can accumulate to toxic levels if the patient has renal impairment. · Stop antibiotics once the obstruction is definitively treated (bowel resected or obstruction resolved) and there is no ongoing infection—continuation beyond 24 hours post-op (if no perforation or tissue death (necrosis) found) does not help and increases resistance and C. difficile risk. · Watch for signs that antibiotics are not enough: rising white blood cell count, worsening fever, dropping blood pressure, or spreading peritonitis—these mean the bowel may be perforated or gangrenous and surgery cannot wait.

Red flags

- Fever above 100.4°F (38°C) with steady, severe belly pain — warns that the bowel may be losing blood flow or tearing
- Fast heart rate (tachycardia over 100 beats per minute) or low blood pressure — signs the body is losing fluid fast or going into shock
- Belly is rigid, very tender to touch, or shows guarding (muscles tighten to protect) — suggests the bowel may have torn and spilled contents into the belly (peritonitis)
- Vomit or belly pain that smells like feces — late sign of a low, complete blockage or dead bowel
- No urine output or very dark urine — the body is dangerously low on fluid

Nursing priorities

1. Make the patient NPO and insert or maintain nasogastric tube on low continuous suction, measuring and recording output every 4 hours — The blocked intestine fills with swallowed air, digestive juice, and bacteria that back up and cause vomiting; suctioning decompresses (empties) the bowel above the blockage, relieves pressure, prevents aspiration (vomit entering lungs), and reduces risk of perforation
2. Start large-bore IV access and give isotonic crystalloid fluids (normal saline or lactated Ringer solution) at the rate ordered, monitoring urine output hourly — Vomiting and third-spacing into the distended bowel cause hypovolemia (low blood volume) and electrolyte loss; aggressive IV fluid replacement restores circulating volume, perfuses (supplies blood to) organs, and prevents acute kidney injury and shock

3. Monitor vital signs every 1 to 2 hours, watching for a fast heart rate (tachycardia) (fast heart rate above 100), fever above 100.4 Fahrenheit, or low blood pressure below 90 systolic — A fast heart rate (Tachycardia) and low blood pressure signal worsening dehydration or sepsis (infection in the bloodstream); fever suggests strangulation, starved blood flow (ischemia), or perforation; these changes mean the obstruction is becoming surgical emergency
4. Assess abdomen every 2 to 4 hours for worsening distension (swelling), location and quality of pain, bowel sounds, and peritoneal signs like rigidity (board-hard belly) or rebound tenderness (pain when you release pressure) — Early obstruction causes high-pitched tinkling bowel sounds and crampy pain as the intestine fights the blockage; silent abdomen with constant severe pain and rigidity means dead bowel or perforation requiring immediate surgery
5. Check and replace electrolytes—especially potassium, sodium, and chloride—based on lab results every 6 to 12 hours — Vomiting removes gastric acid rich in hydrogen, chloride, and potassium, causing metabolic alkalosis (the blood turning too alkaline) (blood too alkaline) and low potassium (hypokalemia) (low potassium); low potassium causes dangerous heart rhythms and worsens a stalled gut (ileus) (paralyzed intestine that will not move even after blockage is cleared)
6. Measure and document intake (IV fluids) and output (urine, NG tube drainage, vomit) every shift, calculating fluid balance — Accurate intake and output tracking shows whether IV resuscitation is working; urine output below 0.5 milliliters per kilogram per hour means inadequate blood flow (perfusion); high NG output guides how much fluid and electrolyte replacement the patient needs
7. Keep patient comfortable with IV pain medicine, repositioning, and mouth care every 2 hours, since NPO and NG suction cause dry cracked lips and thirst — Pain increases sympathetic (stress) response, raising heart rate and oxygen demand; mouth care prevents mucositis (painful mouth sores) and infection; comfort reduces anxiety, which helps the patient cooperate with treatment and report new symptoms
8. Prepare patient for imaging (CT scan with IV contrast or Gastrografin study) or surgery by ensuring informed consent is signed, removing jewelry, confirming allergy history, and keeping IV access patent — CT scan shows the blockage location, cause, and whether bowel is blood-starved (ischemic) or perforated; Gastrografin (water-soluble contrast) is both diagnostic and therapeutic because it pulls fluid into the intestine and may break up partial obstructions; surgery is needed if conservative treatment fails or strangulation occurs

Sources

- American College of Surgeons
- Eastern Association for the Surgery of Trauma (EAST) 2018 SBO guideline

- World Journal of Emergency Surgery 2017 consensus
- UpToDate clinical reference

Last reviewed: 2026-07-07