Intestinal Pseudo-Obstruction

NIH Publication February 2014.

International Foundation for Gastrointestinal Disorders (www.iffgd.org)

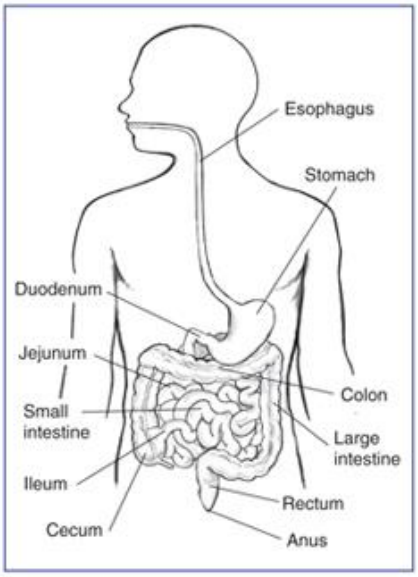
Reading time:15 minutes

What is intestinal pseudo-obstruction?

Intestinal pseudo-obstruction is a rare condition with symptoms that resemble those caused by a blockage, or obstruction, of the intestines, also called the bowel. However, when a health care provider examines the intestines, no blockage exists. Instead, the symptoms are due to nerve or muscle problems that affect the movement of food, fluid, and air through the intestines.

The intestines are part of the gastrointestinal (GI) tract and include the small intestine and the large intestine. The small intestine is the organ where most digestion occurs. The small intestine measures about 20 feet and includes the

- duodenum, the first part of the small intestine
- jejunum, the middle section of the small intestine
- ileum, the lower end of the small intestine



The large intestine absorbs water from stool and changes it from a liquid to a solid form, which passes out of the body during a bowel movement. The large intestine measures about 5 feet and includes the

- cecum, the first part of the large intestine, which is connected to the ileum
- colon, the part of the large intestine extending from the cecum to the rectum
- rectum, the lower end of the large intestine leading to the anus

Who is more likely to have intestinal pseudo-obstruction?

This condition can occur in people of any age. Some infants are born with congenital intestinal pseudo-obstruction, and some people develop this condition as adults. Intestinal pseudo-obstruction may be acute, occurring suddenly and lasting a short time, or it may be chronic, or long lasting.

Acute colonic pseudo-obstruction, also called Ogilvie syndrome or acute colonic ileus, mostly affects older adults. In this condition, the colon becomes distended, or enlarged, after

- surgery, such as operations to open the abdomen or replace a hip or knee
- injury, such as a hip fracture
- illness, such as a serious infection

Acute colonic pseudo-obstruction can lead to serious complications. However, people with the condition usually get better with treatment.

What causes intestinal pseudo-obstruction?

Problems with nerves, muscles, or interstitial cells of Cajal cause intestinal pseudo-obstruction. Interstitial cells of Cajal are called “pacemaker” cells because they set the pace of intestinal contractions. These cells convey messages from nerves to muscles.

Problems with nerves, muscles, or interstitial cells of Cajal prevent normal contractions of the intestines and cause problems with the movement of food, fluid, and air through the intestines.

Primary or idiopathic intestinal pseudo-obstruction is intestinal pseudo-obstruction that occurs by itself. In some people with primary intestinal pseudo-obstruction, mutations, or changes, in genes—traits passed from parent to child—cause the condition. However, health care providers do not typically order genetic testing for an intestinal pseudo-obstruction, as

they don't commonly recognize gene mutations as a cause.

Some people have duplications or deletions of genetic material in the FLNA gene. Researchers believe that these genetic changes may impair the function of a protein, causing problems with the nerve cells in the intestines.1
As a result, the nerves cannot work with the intestinal muscles to produce normal contractions that move food, fluid, and air through the digestive tract. Also, these genetic changes may account for some of the other signs and symptoms that can occur with intestinal pseudo-obstruction, such as bladder symptoms and muscle weakness.

A condition called mitochondrial neurogastrointestinal encephalopathy may also cause primary intestinal pseudo-obstruction. In people with this condition, mitochondria—structures in cells that produce energy—do not function normally. Mitochondrial neurogastrointestinal encephalopathy can also cause other symptoms, such as problems with nerves in the limbs and changes in the brain.

Secondary intestinal pseudo-obstruction develops as a complication of another medical condition. Causes of secondary intestinal pseudo-obstruction include

- abdominal or pelvic surgery
- diseases that affect muscles and nerves, such as lupus erythematosus, scleroderma, and Parkinson's disease
- infections
- medications, such as opiates and antidepressants, that affect muscles and nerves
- radiation to the abdomen
- certain cancers, including lung cancer

What are the symptoms of intestinal pseudo-obstruction?
Intestinal pseudo-obstruction symptoms may include

- abdominal swelling or bloating, also called distension
- abdominal pain
- nausea
- vomiting
- constipation
- diarrhea

Over time, the condition can cause malnutrition, bacterial overgrowth in the intestines, and weight loss. Malnutrition is a condition that develops when the body does not get the right amount of the vitamins, minerals, and other nutrients it needs to maintain healthy tissues and organ function.

Some people develop problems with their esophagus, stomach, or bladder.

How is intestinal pseudo-obstruction diagnosed?
To diagnose intestinal pseudo-obstruction, a health care provider may suggest the person consult a gastroenterologist—a doctor who specializes in digestive diseases. A health care provider will perform a physical exam; take a complete medical history, imaging studies, and a biopsy; and perform blood tests. A health care provider may order other tests to confirm the diagnosis. The health care provider also will look for the cause of the condition, such as an underlying illness.

Intestinal pseudo-obstruction can be difficult to diagnose, especially primary intestinal pseudo-obstruction. As a result, a correct diagnosis may take a long time.

Physical Exam
A physical exam is one of the first things a health care provider may do to help diagnose intestinal pseudo-obstruction. During a physical exam, a health care provider usually

- examines a person's body
- uses a stethoscope to listen to bodily sounds
- taps on specific areas of the person's body

Medical History
The health care provider will ask a person to provide a medical and family history to help diagnose intestinal pseudo-obstruction.

Imaging Studies
A health care provider may order the following imaging studies:

Abdominal x-ray. An x-ray is a picture recorded on film or a computer that a technician takes using low-level radiation. The amount of radiation used is small. An x-ray technician takes the x-ray at a hospital or an outpatient center, and a radiologist—a doctor who specializes in medical imaging—interprets the images. A person does not need anesthesia. The person will lie on a table or stand during the x-ray. The technician positions the x-ray machine over the abdominal area. The person will hold his or her breath as the technician

takes the picture so that the picture will not be blurry. The technician may ask the person to change position for additional pictures. An x-ray of the abdominal area will show whether symptoms are due to an intestinal blockage.

Upper GI series. A health care provider may order an upper GI series to look at the small intestine. An x-ray technician performs the test at a hospital or an outpatient center, and a radiologist interprets the images; the health care provider may give infants and children anesthesia. A person should not eat or drink for 8 hours before the procedure, if possible. During the procedure, the person will stand or sit in front of an x-ray machine and drink barium, a chalky liquid. Infants lie on a table and the technician will give them barium through a tiny tube placed in the nose that runs into the stomach. Barium coats the lining of the small intestine, making signs of obstruction show up more clearly on x-rays.

A person may experience bloating and nausea for a short time after the test. Barium liquid in the GI tract causes stools to be white or light colored for several days or longer in people with intestinal pseudo-obstruction. A health care provider will give the person specific instructions about eating and drinking after the test.

Lower GI series. A health care provider may order a lower GI series, an x-ray exam to look at the large intestine. An x-ray technician performs the test at a hospital or an outpatient center, and a radiologist interprets the images. A person does not need anesthesia. The health care provider may provide written bowel prep instructions to follow at home before the test. The health care provider may ask the person to follow a clear liquid diet for 1 to 3 days before the procedure. A person may need to use a laxative or an enema before the test. A laxative is medication that loosens stool and increases bowel movements. An enema involves flushing water or laxative into the anus using a special squirt bottle.

For the test, the person will lie on a table while the health care provider inserts a flexible tube into the person's anus. The health care provider will fill the large intestine with barium, making signs of underlying problems show up more clearly on x-rays. The test can show problems with the large intestine that are causing the person's symptoms.

Barium liquid in the GI tract causes stools to be white or light colored for several days or longer in people with intestinal pseudo-obstruction. Enemas and repeated bowel movements may cause anal soreness. A health care provider will provide specific instructions about eating and drinking after the test.

Computerized tomography (CT) scan. CT scans use a combination of x-rays and computer technology to create images. An x-ray technician performs the test at a hospital or an outpatient center, and a radiologist interprets the images. For a CT scan, a health care provider may give the person a solution to drink and an injection of a special dye, called contrast medium. CT scans require the person to lie on a table that slides into a tunnel-shaped device where the technician takes the x-rays. CT scans can show both the internal and external intestinal wall. The health care provider may give children a sedative to help them fall asleep for the test.

Upper GI endoscopy. This procedure involves using an endoscope—a small, flexible tube with a light—to see the upper GI tract, which includes the esophagus, stomach, and duodenum. A gastroenterologist performs the test at a hospital or an outpatient center. The gastroenterologist carefully feeds the endoscope down the esophagus and into the stomach and duodenum. A small camera mounted on the endoscope transmits a video image to a monitor, allowing close examination of the intestinal lining. A health care provider may give a person a liquid anesthetic to gargle or may spray anesthetic on the back of the person's throat. A health care provider will place an intravenous (IV) needle in a vein in the arm to administer sedation. Sedatives help patients stay relaxed and comfortable. This test can show blockages or other conditions in the upper small intestine. A gastroenterologist may obtain a biopsy of the lining of the small intestine during an upper GI endoscopy.

Biopsy

A gastroenterologist can obtain a biopsy of the intestinal wall during endoscopy or during surgery, if the person has surgery for intestinal pseudo-obstruction and the cause is unknown. If the health care provider needs to examine the nerves in the intestinal wall, a deeper biopsy, which a gastroenterologist can typically obtain only during surgery, is necessary.

A biopsy is a procedure that involves taking a piece of the intestinal wall tissue for examination with a microscope. A health care provider performs the biopsy in a hospital and uses light sedation and local

anesthetic; the health care provider uses general anesthesia if performing the biopsy during surgery. A pathologist—a doctor who specializes in diagnosing diseases—examines the intestinal tissue in a lab. Diagnosing problems in the nerve pathways of the intestinal tissue requires special techniques that are not widely available. A health care provider can also use a biopsy obtained during endoscopy to rule out celiac disease. Celiac disease is an autoimmune disorder in which people cannot tolerate gluten because it damages the lining of their small intestine and prevents absorption of nutrients. Gluten is a protein found in wheat, rye, and barley and in products such as vitamin and nutrient supplements, lip balms, and certain medications.

Blood Tests

A blood test involves drawing blood at a health care provider's office or a commercial facility and sending the sample to a lab for analysis. The blood test can show the presence of other diseases or conditions that may be causing a person's symptoms. The blood test also can show levels of essential vitamins and minerals to help detect malnutrition.

Manometry

Manometry is a test that measures muscle pressure and movements in the GI tract, such as how well the smooth muscles of the stomach and small intestine contract and relax. A gastroenterologist performs the test at a hospital or an outpatient center. While the person is under sedation, a health care provider places a thin tube, or manometry tube, into the stomach and moves it down into the small intestine. A gastroenterologist may use an endoscope to place this tube. A health care provider will move the person to a manometry room and connect the manometry tube to a computer. When the person wakes up from sedation, the computer records the pressure inside the intestine while the person is fasting and after the person has eaten a meal. Manometry can confirm the diagnosis of intestinal pseudo-obstruction and show the extent of the condition.

Gastric Emptying Tests

Gastric emptying tests can show if a disorder called gastroparesis is causing a person's symptoms. People with gastroparesis, which literally refers to a paralyzed stomach, have severely delayed gastric emptying, or the delayed movement of food from the stomach to the small intestine. Some patients with intestinal pseudo-obstruction also have gastroparesis. Types of gastric emptying tests include the following:

Gastric emptying scintigraphy. This test involves eating a bland meal—such as eggs or an egg substitute—that contains a small amount of radioactive material. A specially trained technician performs the test in a radiology center or hospital, and a radiologist interprets the results; the person does not need anesthesia. An external camera scans the abdomen to show where the radioactive material is located. The radiologist is then able to measure the rate of gastric emptying at 1, 2, 3, and 4 hours after the meal. Normal values depend on the composition of the meal. With some meals, if more than 10 percent of the meal is still in the stomach at 4 hours, a health care provider confirms the diagnosis of gastroparesis. Obtaining scans for 4 hours after the meal is essential. When the technician only obtains scans 1 to 2 hours after the meal, the results are often unreliable.

Breath test. With this test, the person eats a meal containing a small amount of nonradioactive material. Then, the health care provider takes breath samples over a period of several hours to measure the amount of nonradioactive material in the exhaled breath. The results allow the health care provider to calculate how fast the stomach is emptying.

SmartPill. The SmartPill is a small electronic device in capsule form. The SmartPill test is available at specialized outpatient centers. The person swallows the device so that it can move through the entire digestive tract and send information to a cell-phone-sized receiver worn around the person's waist or neck. The recorded information provides details about how quickly food travels through each part of the digestive tract.

How is intestinal pseudo-obstruction treated?

A health care provider will treat intestinal pseudo-obstruction with nutritional support, medications, and, in some cases, decompression. Rarely, a person will need surgery. If an illness, a medication, or both cause intestinal pseudo-obstruction, a health care provider will treat the underlying illness, stop the medication, or do both.

Nutritional Support

People with intestinal pseudo-obstruction often need nutritional support to prevent malnutrition and weight loss. Enteral nutrition provides liquid food through a feeding tube inserted through the nose into the stomach or placed directly into the stomach or small

intestine. A health care provider inserts the feeding tube, sometimes using x-ray or endoscopy for guidance, and teaches the person how to care for the tube after returning home. Enteral nutrition is sufficient for most people with intestinal pseudo-obstruction. In a severe case, a person may need IV feeding, also called parenteral nutrition, which provides liquid food through a tube placed in a vein. Enteral nutrition is possible because the intestinal lining is normal in most people with intestinal pseudo-obstruction. Enteral nutrition is preferred over parenteral nutrition because it has a much lower risk of complications.

Medications

A health care provider prescribes medications to treat the different symptoms and complications of intestinal pseudo-obstruction, such as

- antibiotics to treat bacterial infections
- pain medication, which should be used sparingly, if at all, because most pain medications delay intestinal transit
- medication to make intestinal muscles contract
- antinausea medications
- antidiarrheal medications
- laxatives

Decompression

A person with acute colonic pseudo-obstruction and a greatly enlarged colon who does not respond to medications may need a procedure, called decompression, to remove gas from the colon. A gastroenterologist can perform the procedure in a hospital or an outpatient center. The gastroenterologist may choose to decompress the colon by using colonoscopy. During colonoscopy, the gastroenterologist inserts a flexible tube into the colon through the anus. A health care provider gives the person a light sedative, and possibly pain medication, to relax. If the person requires long-term decompression, the gastroenterologist also can decompress the colon through a surgical opening in the cecum. In this case, the health care provider gives the person local anesthesia.

Surgery

In severe cases of intestinal pseudo-obstruction, a person may need surgery to remove part of the intestine. However, surgery should be performed rarely, if at all, because intestinal pseudo-obstruction is a generalized disorder that typically affects the entire intestine. Removing part of the intestine cannot cure the disease. A surgeon—a doctor who specializes in surgery—will perform the surgery at a hospital; a person will need general anesthesia. A few highly specialized treatment centers offer small intestine transplantation. A health care provider may recommend small intestine transplantation when all other treatments have failed.

Eating, Diet, and Nutrition

Researchers have not found that eating, diet, and nutrition play a role in causing or preventing intestinal pseudo-obstruction. Following special diets usually does not help improve the disorder.

However, eating frequent, small meals with pureed foods or liquids may ease digestion. Vitamin and trace mineral supplements may help a person who is malnourished.

Clinical Trials

The National Institute of Diabetes and Digestive and Kidney Diseases (NIDDK) and other components of the National Institutes of Health (NIH) conduct and support research into many diseases and conditions.

What are clinical trials, and are they right for you?

Clinical trials are part of clinical research and at the heart of all medical advances. Clinical trials look at new ways to prevent, detect, or treat disease. Researchers also use clinical trials to look at other aspects of care, such as improving the quality of life for people with chronic illnesses.

What clinical trials are open?

Clinical trials that are currently open and are recruiting can be viewed at www.ClinicalTrials.gov

References

[1] Intestinal pseudo-obstruction. U.S. National Library of Medicine website. www.ghr.nlm.nih.gov NIH external link. Updated October 2010. Accessed June 17, 2013.

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The NIDDK would like to thank:
Adil E. Bharucha, MBBS, M.D., Mayo Clinic

About IFFGD

The International Foundation for Gastrointestinal Disorders (IFFGD) is a 501(c)(3) nonprofit education and research organization. We work to promote awareness, scientific advancement, and improved care for people affected by chronic digestive conditions. Our mission is to inform, assist, and support people affected by gastrointestinal disorders. Founded in 1991, we rely on donors to carry out our mission. Visit our websites at: www.iffgd.org

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