CONDITION

Adhesion

Learn how abdominal and pelvic adhesions form, what symptoms they may cause, and when bowel obstruction symptoms need urgent medical care.

WHAT IT IS
Band of fibrous scar-like tissue connecting body surfaces

BODY SYSTEM
Digestive and reproductive systems

MAIN SYMPTOMS
Abdominal or pelvic pain, bloating, nausea, inability to pass stool or gas

WHAT CAUSES IT
Surgery, inflammation, infection, injury or radiation

HOW IT IS DIAGNOSED
Direct visualization during surgery, hysteroscopy for intrauterine adhesions

MAIN TREATMENT
Observation or surgical adhesiolysis

CAN IT BE CURED?
Sometimes - surgery can divide symptomatic adhesions

IS IT AN EMERGENCY?
Sometimes - severe or steadily worsening abdominal pain

LONG-TERM OUTLOOK
Often symptom-free, but recurrent pain or obstruction can occur

Overview

An adhesion is a band of fibrous, scar-like tissue that connects body surfaces that normally move separately. Adhesions most often develop inside the abdomen or pelvis after surgery. They can also form after inflammation, infection, injury, or radiation treatment.

Abdominal adhesions may join loops of intestine to each other or attach the intestine to the abdominal wall or another organ. Pelvic adhesions can involve the uterus, ovaries, fallopian tubes, bladder, or bowel. Adhesions may also form inside the uterus, where they are called intrauterine adhesions.

Many adhesions never cause symptoms and do not need treatment. When problems occur, however, an adhesion can pull on an organ, limit normal movement, or squeeze and bend part of the intestine. This may contribute to long-term abdominal or pelvic pain. It can also cause a

bowel obstruction, meaning that food, liquid, and gas cannot move through the intestine normally.

A bowel obstruction can become serious if it cuts off the intestine's blood supply. Recognizing obstruction symptoms is therefore important, even when abdominal surgery happened many years earlier.

This article focuses mainly on abdominal and pelvic adhesions. Adhesions around joints, tendons, or other structures have different symptoms and treatments.

Symptoms

Most abdominal adhesions cause no noticeable symptoms. They may be discovered during an operation performed for another reason.

When symptoms occur, they depend on the location of the adhesion and the organs involved. Possible symptoms include:

Pain alone does not prove that adhesions are responsible. Conditions involving the digestive, urinary, or reproductive systems can cause similar symptoms. Some people have extensive adhesions without pain, while others have pain with little visible adhesion disease.

An adhesion can bend, twist, or compress the small intestine, causing a small bowel obstruction. Symptoms may include cramping abdominal pain, vomiting, a swollen abdomen, and inability to pass stool or gas. Symptoms may come in waves at first, but pain can become constant if the intestine is damaged.

Seek urgent medical assessment for possible obstruction symptoms. Go to an emergency department for severe or steadily worsening abdominal pain, repeated vomiting, marked swelling, inability to pass stool or gas, fainting, confusion, or signs of dehydration. Fever, a rapid heartbeat, blood in the stool, or constant tenderness may suggest a complication that requires prompt care.

- Recurrent or persistent abdominal or pelvic pain
- A pulling or cramping feeling in the abdomen
- Abdominal swelling or bloating
- Nausea or reduced appetite
- Pain during sex when pelvic organs are affected
- Difficulty becoming pregnant if adhesions affect the ovaries or fallopian tubes
- Lighter or absent menstrual periods when adhesions form inside the uterus

Causes and risk factors

Abdominal or pelvic surgery is the most common setting in which adhesions develop. Surgery temporarily injures tissue surfaces. As the body heals, fibrous tissue may form between surfaces that were close together.

Adhesions may follow either open surgery through a larger incision or minimally invasive surgery through small incisions. The likelihood and extent of adhesion formation depend on many factors, including the operation's location, tissue handling, bleeding, infection, and each person's healing response. Minimally invasive techniques may reduce tissue injury in some situations, but they cannot prevent every adhesion.

Other possible causes include:

Some adhesions are present from birth, although this is less common.

Pelvic infection, endometriosis, and previous reproductive surgery can lead to adhesions around the fallopian tubes or ovaries. Intrauterine adhesions may develop after injury to the uterine lining, sometimes following a pregnancy-related procedure or an infection. Having a risk factor does not mean that a person will develop symptoms or complications.

- Abdominal or pelvic infection
- Inflammatory bowel disease, such as Crohn's disease
- Diverticulitis, which is inflammation of small pouches in the colon
- Endometriosis, in which tissue similar to the uterine lining grows outside the uterus
- A ruptured appendix or another source of inflammation inside the abdomen
- Abdominal or pelvic radiation treatment
- Injury or bleeding within the abdomen

Diagnosis

There is no routine blood test that can confirm an adhesion. Standard imaging tests often cannot show the thin bands directly. Diagnosis may therefore require a review of symptoms, previous operations, and other possible causes.

A clinician may ask about:

The physical examination may include checking the abdomen for swelling, scars, tenderness, or unusual bowel sounds. A pelvic examination may be appropriate for some symptoms.

Blood tests cannot identify adhesions, but they may help assess dehydration, infection,

inflammation, anemia, or organ function. Pregnancy testing may be needed when symptoms could be related to pregnancy.

If bowel obstruction is suspected, an abdominal X-ray or computed tomography, commonly called a CT scan, may show widened bowel loops, trapped fluid and gas, or the point where the blockage occurs. CT can also look for reduced blood flow, perforation, and other causes of abdominal pain. Ultrasound or magnetic resonance imaging, known as MRI, may be useful in selected situations.

Tests for pelvic symptoms may include ultrasound or specialized imaging of the uterus and fallopian tubes. Intrauterine adhesions are usually evaluated with hysteroscopy, a procedure in which a thin camera is passed through the cervix to view the inside of the uterus.

The only direct way to confirm many abdominal adhesions is to see them during surgery. Surgery is not usually performed only to establish a diagnosis because it carries risks and can create new adhesions. Before considering an operation for chronic pain, clinicians generally evaluate other likely causes.

- The location, pattern, and duration of pain
- Vomiting, bloating, bowel movements, and ability to pass gas
- Previous abdominal or pelvic operations
- Endometriosis, inflammatory conditions, infections, or radiation treatment
- Menstrual changes, pregnancy history, or fertility concerns
- Medicines and other health conditions

Treatment and management

Adhesions that do not cause symptoms usually require no treatment. There is no medicine, exercise, massage, or special diet proven to dissolve an established abdominal adhesion.

Management depends on the problem attributed to the adhesion.

For chronic or recurrent pain, care begins with a careful evaluation rather than immediate surgery. Treatment may address other conditions found during the assessment. A clinician may discuss symptom tracking, suitable pain-management options, nutrition, physical activity, pelvic floor therapy, or referral to a gastroenterologist, gynecologist, pain specialist, or surgeon. The best approach depends on the pain pattern and the organs involved.

Surgery to divide adhesions is called adhesiolysis. It may be performed through small incisions with a camera or through an open incision. Although adhesiolysis can relieve a clearly defined

blockage or restore access to an affected organ, pain relief is not guaranteed. The operation may injure the bowel, cause bleeding or infection, and lead to new adhesions. These benefits and risks should be discussed carefully when surgery is being considered mainly for pain.

A bowel obstruction caused by adhesions generally requires hospital assessment. If there are no signs of reduced blood flow, perforation, or severe infection, the medical team may first use nonoperative care. This can include intravenous fluids, temporary avoidance of food and drink, treatment for nausea and pain, and close monitoring. A tube passed through the nose into the stomach may be used to remove fluid and reduce pressure.

Surgery may be needed when the bowel's blood supply appears threatened, the intestine has perforated, symptoms are worsening, or the obstruction does not improve with hospital treatment. The surgeon releases the adhesion and examines the bowel. A damaged section may need to be removed.

Pelvic adhesions affecting fertility require individualized evaluation because several factors can influence the chance of pregnancy. Treatment may involve surgery in selected cases or discussion of assisted reproductive options. Intrauterine adhesions are usually treated with hysteroscopic surgery when they cause menstrual, pregnancy, or fertility problems.

Surgeons may use careful tissue handling, control of bleeding, minimally invasive methods when appropriate, and approved barrier materials to reduce adhesion formation. No prevention method removes the risk completely.

Complications

The main serious complication of abdominal adhesions is intestinal obstruction. An obstruction can be partial or complete and may occur soon after surgery or many years later.

A tightly trapped or twisted section of intestine may lose its blood supply. This is called strangulation. Without enough blood, bowel tissue can become damaged and may develop a hole, known as a perforation. Intestinal contents can then leak into the abdomen and cause a severe infection. Prompt treatment reduces the risk of these outcomes.

Other possible complications include:

Adhesions can make future operations longer or more complex because normal tissue planes may be harder to identify. This can increase the chance of accidental injury to the bowel, bladder, blood vessels, or other organs.

- Recurrent episodes of bowel obstruction
- Chronic abdominal or pelvic pain

- Difficulty becoming pregnant
- Menstrual changes or pregnancy complications from intrauterine adhesions
- Greater difficulty or risk during later abdominal or pelvic surgery

Follow up

Routine follow-up is appropriate for ongoing or recurrent abdominal or pelvic discomfort, unexplained menstrual changes, pain during sex, or fertility concerns. Keep a record of when symptoms occur, what they feel like, whether they relate to meals or bowel movements, and how they affect daily activities. Bring a list of previous operations and, if available, operative reports.

After treatment for a bowel obstruction, follow the discharge plan provided by the hospital team. Ask what diet and activity are appropriate during recovery, when to resume usual medicines, and which symptoms should lead to reassessment. Contact the treating clinician if pain, nausea, bloating, or bowel changes return.

Do not wait for a routine appointment if symptoms suggest another obstruction. Seek urgent medical care for repeated vomiting, increasing abdominal swelling, significant cramping, or inability to pass stool or gas.

Emergency evaluation is especially important for severe or constant pain, fainting, confusion, fever with worsening abdominal symptoms, blood in the stool, or a very tender or rigid abdomen. These symptoms do not always mean that bowel damage has occurred, but they need prompt assessment.

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