CONDITION

Pancreas divisum

Pancreas divisum is a difference present from birth in how the pancreatic drainage ducts join and empty into the small intestine.

WHAT IT IS
Congenital separation of the main pancreatic drainage ducts

BODY SYSTEM
Digestive system

MAIN SYMPTOMS
Usually none, or pancreatitis-related abdominal pain, nausea, vomiting

WHAT CAUSES IT
Pancreatic ducts not joining before birth

HOW IT IS DIAGNOSED
MRCP or endoscopic ultrasound; ERCP when intervention is planned

MAIN TREATMENT
None if symptom-free; pancreatitis care and selected duct procedures

CAN IT BE CURED?
No - duct anatomy remains lifelong

IS IT AN EMERGENCY?
Sometimes - severe persistent abdominal pain may signal pancreatitis

LONG-TERM OUTLOOK
Most people remain symptom-free throughout life

Overview

Pancreas divisum is a difference in the way the pancreas develops before birth. The pancreas is an organ behind the stomach. It makes digestive juices and hormones, including insulin.

Pancreatic juices travel through small tubes called ducts and empty into the first part of the small intestine. During typical development, two early duct systems join together. In pancreas divisum, they do not fully join.

As a result, most pancreatic juice drains through a smaller opening called the minor papilla. This anatomy remains throughout life. It is not an infection, cancer, or damage caused by something you did.

Most people with pancreas divisum never have symptoms. They may only learn about it during

imaging for another reason. In a smaller group, the drainage pattern may contribute to repeated episodes of acute pancreatitis, meaning sudden inflammation of the pancreas. However, the link is not straightforward. Many people with pancreas divisum never develop pancreatitis, and other causes should be considered when pancreatitis occurs.

Symptoms

Pancreas divisum itself usually causes no symptoms. When symptoms do occur, they are generally related to pancreatitis rather than to the duct difference alone.

Acute pancreatitis may cause:

Pain from pancreatitis is often persistent and may be severe. It is different from brief, mild indigestion.

Repeated inflammation can sometimes lead to chronic pancreatitis. This is long-lasting pancreatic inflammation and scarring. Possible symptoms include ongoing or recurring upper abdominal pain, unintended weight loss, diarrhoea, and greasy or difficult-to-flush stools. These stool changes can happen when the pancreas does not release enough digestive enzymes.

Symptoms cannot confirm pancreas divisum. Many more common conditions can cause abdominal pain, nausea, or changes in bowel movements.

- Sudden or steadily worsening pain in the upper abdomen
- Pain that spreads through to the back
- Nausea and vomiting
- Abdominal tenderness, fever, or a fast heartbeat

Causes and risk factors

Pancreas divisum develops before birth. Early in pregnancy, the pancreas forms from two areas of tissue, each with its own duct. These ducts normally join. In pancreas divisum, they remain fully or partly separate.

It is not caused by diet, alcohol, medicines, stress, or an injury later in life. It is also not contagious. Although it is present from birth, it is not usually considered a condition passed down through families in a simple, predictable way.

Why only some people develop symptoms is uncertain. One theory is that the minor papilla

may be too narrow to drain pancreatic juice easily. Increased pressure inside the duct could then contribute to inflammation.

Pancreas divisum may act as one factor alongside other risks for pancreatitis. These can include gallstones, heavy alcohol use, smoking, very high blood triglycerides, certain medicines, or genetic changes that affect the pancreas. Finding pancreas divisum does not prove that it caused an episode of pancreatitis.

Diagnosis

Pancreas divisum is often found by chance during a scan. If it is suspected because of repeated pancreatitis, the assessment usually also looks for other possible causes.

Magnetic resonance cholangiopancreatography, or MRCP, is a special type of MRI that shows the pancreatic and bile ducts. It does not require an instrument to be passed into the ducts. In some centres, a hormone called secretin is given during MRCP to increase pancreatic fluid temporarily and make the ducts easier to see.

Endoscopic ultrasound can also examine the pancreas and its ducts. During this test, a thin flexible instrument is passed through the mouth into the stomach and small intestine. An ultrasound device at its tip creates detailed images.

Endoscopic retrograde cholangiopancreatography, or ERCP, can show the duct openings directly. It involves passing an endoscope into the small intestine and injecting contrast dye into the ducts. Because ERCP can itself cause pancreatitis and other complications, it is generally reserved for situations where treatment may be performed during the same procedure.

Blood tests do not diagnose pancreas divisum. During suspected acute pancreatitis, tests such as lipase can show pancreatic inflammation. CT scans may identify pancreatitis or complications, but they may not show the duct anatomy as clearly as MRCP or endoscopic ultrasound.

Treatment and management

No treatment is needed when pancreas divisum is found by chance and is not causing problems. Procedures are not used simply to make the ducts look more typical.

An episode of acute pancreatitis is treated in the same general way whether or not pancreas divisum is present. Care may include fluids, pain relief, support for eating and nutrition, and treatment of another identified cause. Some people need hospital monitoring.

After repeated episodes, further testing may look for gallstones, alcohol-related injury, abnormal blood fats, medicine effects, autoimmune disease, or genetic factors. This helps avoid attributing every episode to pancreas divisum.

A specialist may consider treatment to improve drainage through the minor papilla when there are repeated, clearly documented attacks of acute pancreatitis and evidence that drainage is restricted. Options include cutting the opening slightly, called minor papilla sphincterotomy, or placing a temporary small tube called a stent.

These procedures are performed during ERCP. They may reduce repeat attacks in selected people, but they do not help everyone. Evidence of benefit is less clear for chronic abdominal pain without documented pancreatitis.

ERCP can cause pancreatitis, bleeding, infection, or injury to the intestine. Stents can move or become blocked and usually need planned removal or replacement. The possible benefits and risks therefore need careful specialist assessment.

Surgery to improve drainage is uncommon. It may be considered when severe, recurrent disease continues despite other management. If chronic pancreatitis has reduced digestive enzyme production or affected blood sugar, treatment may include pancreatic enzyme replacement, nutritional support, or diabetes care.

Complications

Most people with pancreas divisum have no complications.

When the condition is linked with pancreatic inflammation, possible complications include:

Repeated inflammation may also lead to long-term pain. These complications are not inevitable, and finding pancreas divisum alone does not mean they will develop.

Procedures used for treatment have their own risks, particularly pancreatitis after ERCP. This is one reason invasive treatment is usually limited to carefully selected cases.

- Repeated episodes of acute pancreatitis
- Fluid collections around the pancreas
- Chronic pancreatitis and permanent scarring
- Reduced production of digestive enzymes
- Weight loss or poor absorption of nutrients
- Diabetes caused by reduced insulin production

Prevention

Pancreas divisum cannot be prevented because the duct pattern forms before birth. There is no known way to make the ducts join later through diet, exercise, or medicine.

If you have had pancreatitis, reducing other avoidable pancreatic risks may help protect the pancreas. This can include not smoking and avoiding alcohol, particularly if alcohol has contributed to an attack. Managing high triglycerides and following care for gallstones or other identified causes may also reduce risk.

No special "pancreas divisum diet" has been proven to prevent symptoms. Dietary advice may be useful after pancreatitis or when chronic pancreatitis affects digestion, but it should reflect the specific problem rather than the scan finding alone.

Living with it and what to expect

For most people, pancreas divisum remains a harmless anatomical difference. It does not usually change over time, require routine scans, or limit work, exercise, travel, pregnancy, or everyday eating.

People who have had acute pancreatitis may need follow-up to confirm recovery and look for causes. Repeated attacks may lead to specialist monitoring, even when symptoms settle between episodes.

If chronic pancreatitis develops, care may continue over months or years. Follow-up can include attention to pain, weight, nutrition, bowel changes, blood sugar, and the pancreas's ability to make digestive enzymes. Some people need long-term treatment, while others have infrequent or no further attacks.

New or changing abdominal symptoms should not automatically be blamed on pancreas divisum. Other digestive, gallbladder, liver, or heart conditions can cause similar symptoms and may need a separate assessment.

When to get medical help

Arrange routine medical follow-up if you have recurring upper abdominal discomfort, unexplained weight loss, frequent greasy stools, ongoing diarrhoea, or symptoms that interfere with eating. Follow-up is also appropriate after an episode of pancreatitis or if a scan report mentions pancreas divisum and its meaning has not been explained.

Seek urgent medical care for severe or persistent upper abdominal pain, especially if it spreads to the back or occurs with repeated vomiting or fever. These symptoms can occur with acute pancreatitis and usually need prompt testing.

Get emergency help if abdominal pain is accompanied by fainting, confusion, difficulty breathing, blue or grey skin, vomiting blood, or signs of severe dehydration such as being unable to keep fluids down with very little urine. These symptoms are not specific to pancreas divisum, but they can signal a serious illness.

Common questions

Is pancreas divisum dangerous?

Usually not. Most people never have symptoms or complications. It may matter when someone has repeated confirmed episodes of pancreatitis, but the duct pattern alone does not show how severe a person's symptoms will be.

Can pancreas divisum turn into cancer?

Pancreas divisum is not cancer and does not turn into cancer. A scan may sometimes find it while looking for another pancreatic problem, but the conditions are separate. New unexplained weight loss, jaundice, or persistent pain still needs assessment.

Can pancreas divisum go away?

No. It is a lifelong anatomical pattern because the ducts did not join before birth. Treatment does not normally reconnect them. If treatment is needed, its aim is to improve drainage or manage pancreatitis.

Do I need surgery for pancreas divisum?

Most people need no procedure at all. Endoscopic treatment may be considered for selected people with repeated acute pancreatitis. Surgery is uncommon and is generally reserved for ongoing serious problems that have not responded to other approaches.

What should I eat if I have pancreas divisum?

If you have no symptoms or history of pancreatitis, a special diet is not generally required. After pancreatitis or with poor digestion, nutritional needs may be different. Advice may focus on maintaining weight, getting enough nutrients, and managing symptoms rather than changing the duct anatomy.

Does pancreas divisum explain all my abdominal pain?

Not necessarily. Abdominal pain has many possible causes, and pancreas divisum is often an incidental scan finding. A link is more convincing when pain occurs with objective evidence of

pancreatitis, such as raised pancreatic enzymes or changes on imaging.

Sources

- Gutta A, Fogel E, Sherman S. Identification and Management of Pancreas Divisum . Expert Review of Gastroenterology & Hepatology . 2019;13(11):1089-1105
- Strand DS, Law RJ, Yang D, Elmunzer BJ. AGA Clinical Practice Update on the Endoscopic Approach to Recurrent Acute and Chronic Pancreatitis: Expert Review . Gastroenterology . 2022;163(4):1107-1114
- Swensson J, Akisik F, Collins D, et al. Secretin-Enhanced MRCP: How and Why-AJR Expert Panel Narrative Review . American Journal of Roentgenology . 2021;216(5):1139-1149
- National Institute of Diabetes and Digestive and Kidney Diseases. Pancreatitis . U.S. National Institutes of Health