

How are pancreatic cysts diagnosed?

Most pancreatic cysts are initially diagnosed when a scan is performed to evaluate symptoms such as abdominal pain, weight loss, nausea, vomiting or other diseases like kidney stones. Although most pancreatic cysts are benign at diagnosis, it is important to determine whether it has the potential to become cancerous or not. This may require a more thorough examination of the cyst by endoscopic ultrasound (EUS) with possible biopsy to sample the cyst.

Why is it important to investigate pancreatic cysts?

When surgery is performed on a precancerous pancreatic cyst, the 5-year survival is nearly 100%. On the other hand, if the cyst turns into a cancer, the 5-year survival decreases to 5-40% depending on extent of the disease. Therefore, it is important to make a correct diagnosis so that an early intervention (like surgery) can be undertaken in a timely manner.

Why is Endoscopic Ultrasound (EUS) important to investigate pancreatic cysts?

EUS is an endoscope (lighted camera) with an ultrasound attached to its tip. It is passed through the mouth and placed into the stomach and small intestine. Ultrasound images of the pancreas are then obtained through the stomach and intestinal walls. EUS is more accurate than a CT scan or MRI and can identify cysts as small as 2 millimeters. EUS also provides very detailed images of the cyst wall and the cyst contents. More importantly, the cyst can be biopsied using a thin needle and the fluid or tissue analyzed for cancer. Additionally, other tests can be ordered on the cyst fluid to help determine if a cyst can turn into a cancer in the future. While none of these tests are 100% accurate, at present, these are the best available techniques to evaluate pancreatic cysts.

What are the other advantages of EUS?

EUS can provide other important information such as involvement of the cyst by arteries and veins close to the pancreas. This will help the surgeon plan his operation accordingly. Also, biopsy performed at EUS is much more accurate and safe than biopsies performed under CT-scan guidance or surgery.

What happens after EUS?

Depending on the findings at EUS and your symptoms, your doctor will make a recommendation on whether the cyst can be observed (surveillance), or treated by endoscopy or surgery.

What is surveillance?

For cysts that are not at high risk for becoming cancer, your doctors may recommend a period of observation where the cyst will be evaluated periodically by EUS or MRI/CT scan. These will be performed at 6 month or one year intervals depending on the type of cyst you may have. Your doctors will be happy to answer any question that you may have with regards to your follow-up.

What type of pancreatic cyst research studies are conducted in CIE?

The work done at our endoscopy unit is internationally renowned. A number of studies are currently underway to improve our understanding and even further improve outcomes for patients with pancreatic cysts. You are likely to be requested to participate in one of these research studies by our doctors. These studies are all approved by the Florida Hospital Institutional Review Board and do not carry any additional risks or cost to you as a patient. The studies are voluntary and if you choose not to participate, you will still receive the same excellent care.

Our active and proposed research studies on pancreatic cysts include:

- Validation of a EUS-based algorithmic approach to pancreatic cysts.
- Evaluation of pancreatic juice for molecular markers in patients with suspected or confirmed pancreatic neoplasms.
- Efficacy of pancreatic cyst ablation using alcohol and paclitaxel.

IMPORTANT REMINDER:

The preceding information is intended only to provide you with general information and does not serve as a definitive basis for diagnosis or treatment in any particular case. It is very important to consult with your doctor about your specific condition.



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601 East Rollins Street, Orlando, FL 32803
(407) 303-2570 | (855) 341-3411 toll-free



Understanding Pancreatic Cysts



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Overview of Pancreatic Cysts

Where is the pancreas located?

The pancreas is 6-8 inches long with a wider end called the head, the middle part called the body and a tapered end called the tail. Refer to Figure 1. The head of the pancreas is on the right side of your body. It lies close to the liver and a portion of the small bowel called the 'duodenum'. The tail of the pancreas is close to the stomach on the left side of the abdomen. The pancreatic duct is a channel that runs through the pancreas and empties digestive juices into the small bowel. The common bile duct is another channel that drains bile from the gallbladder and the liver and runs through the head of the pancreas connecting with the pancreatic duct to form the Ampulla of Vater.

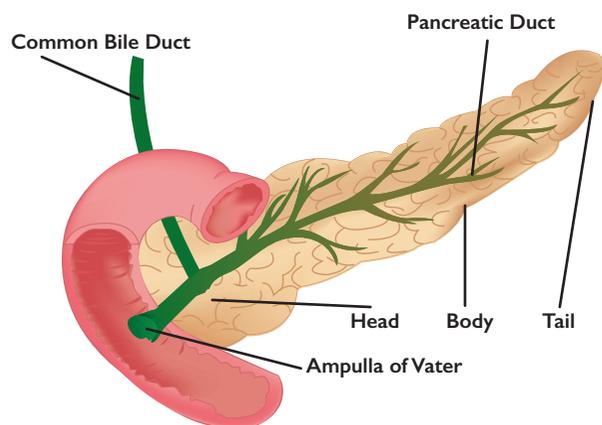


Figure 1. Anatomy of the Pancreas

What are the functions of the pancreas?

The pancreas has two main functions: one, to make digestive juices (enzymes) called the exocrine function, and, two, to produce hormones (like insulin) called the endocrine function.

What are pancreatic cysts?

Pancreatic cysts are abnormal fluid-filled pockets within the pancreas. While it may be alarming to learn that you may have a pancreatic cyst, fortunately, a majority of pancreatic cysts are benign and not cancerous at the time of diagnosis.

What are the symptoms of a pancreatic cyst?

A majority of patients do not experience any symptoms at all. In those that do, symptoms vary and are related to the cyst location and extent of the disease. The most common symptoms are abdominal pain, nausea, vomiting and rarely jaundice.

What are the types of Pancreatic Cysts?

There are 5 types of cysts:

Pseudocysts

These cysts are common and most patients have a history of pancreatitis and elevated blood amylase levels (Figure 2). A majority of patients will not require surgery; however, if the pseudocyst is large and causes abdominal pain, the cyst can be decompressed at endoscopy by placement of stents.

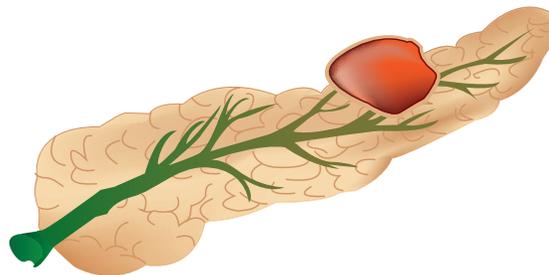


Figure 2. Pseudocyst

Serous Cystadenomas

These cysts usually cause no symptoms and are more common in women. They are generally multiple and have no cancerous potential (Figure 3). Unless they cause symptoms such as abdominal pain, serous cystadenomas can be safely monitored without the need for surgery.

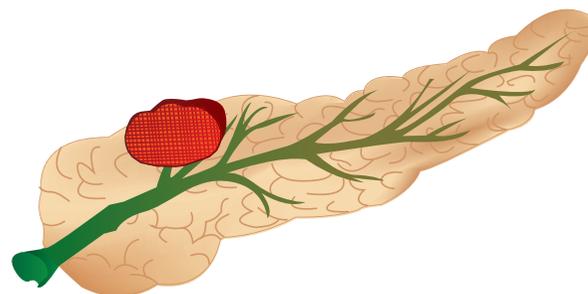


Figure 3. Serous Cystadenomas

Mucinous Cystic Neoplasm

These cysts are more common in woman and are usually located in the tail of the pancreas (Figure 4). Patients can experience abdominal pain and mucinous cystic neoplasms can turn into cancer. Surgery is recommended for most patients to remove these cysts.

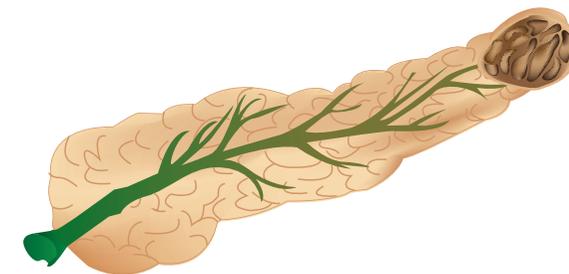


Figure 4. Mucinous Cystic Neoplasm

Intraductal Papillary Mucinous Neoplasm (IPMN)

Patients with IPMN may or may not experience symptoms such as abdominal pain, pancreatitis, jaundice, or weight loss. The disease can affect the main pancreatic duct or a branch of the main pancreatic duct (Figure 5) and have the potential to turn into cancer. A determination will be made at EUS whether the cysts can be safely monitored or if a surgery will be required.

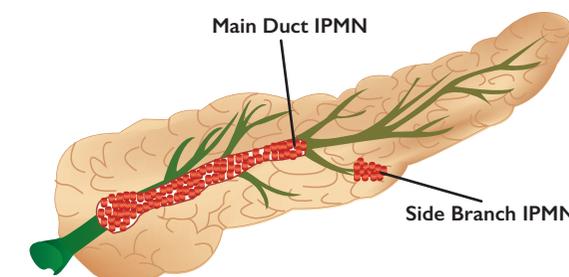


Figure 5. Intraductal Papillary Mucinous Neoplasm

Solid Pseudopapillary Neoplasm

These cysts are rare and the most common symptom is abdominal pain. They are usually located in the body or tail of the pancreas (Figure 6). Surgery is recommended for most patients as these cysts cause symptoms and can turn into cancer.

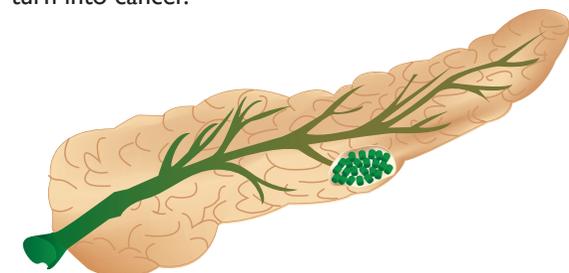


Figure 6. Solid Pseudopapillary Neoplasm