CANINE PANCREATITIS

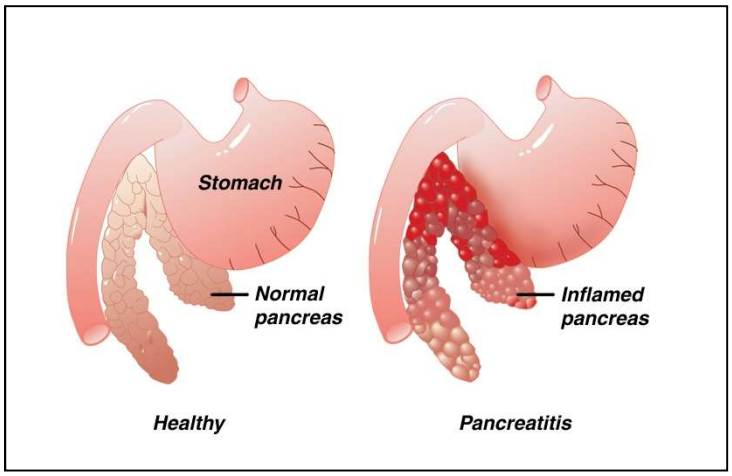
What is pancreatitis?

The pancreas is a vital organ which lies on the right side and top of the abdomen. It has at least two functions:

1) To produce digestive enzymes to assist in food digestion
2) To produce hormones such as insulin

When the pancreas becomes inflamed, the disorder is called *pancreatitis*. It is a disease process that is seen commonly in the dog and cat. Dog breeds with a higher incidence of the disease include the miniature poodle, cocker spaniel, and miniature schnauzer.

There are two main forms of acute or sudden onset pancreatitis: 1) the mild, edematous form and 2) the more severe, hemorrhagic form. A few dogs that recover from an acute episode of pancreatitis may continue to have recurrent bouts of the disease, which is then called chronic, relapsing pancreatitis. The associated inflammation allows digestive enzymes to spill into the abdominal cavity resulting in secondary damage to the liver, bile ducts, gall bladder, and intestines.



What causes pancreatitis?

The cause of pancreatitis is not known; however, there may be several contributory factors. It is often associated with eating a rich, fatty meal. In some cases, it may be associated with the administration of corticosteroids (prednisone and similar drugs); it can also be precipitated by overweight and high triglyceride levels. Severe and protracted vomiting of any cause can result in pancreatitis. However, some dogs with pancreatitis do not have exposure to any of these things. Several drugs can cause pancreatitis rarely in some dogs – L-asparaginase, bromides, ranitidine (Zantac®, azathioprine (Imuran®), estrogens and rancid fish oils.

Under normal conditions, digestive enzymes produced by the pancreas are activated when they reach the small intestine. In pancreatitis, these enzymes are activated prematurely in the pancreas instead of in the small intestine. This results in digestion of the pancreas itself. The clinical signs of pancreatitis are often variable, and the intensity of the disease will depend on the quantity of enzymes that are prematurely activated.

What are the symptoms of pancreatitis?

The diagnosis of pancreatitis is normally based on three criteria: symptoms (referred to as clinical signs), laboratory tests, and the results of radiographs (x-rays) and/or ultrasound examination. The disease is typically manifested by nausea, vomiting, loss of appetite, fever,

abdominal pain, and diarrhea. If the attack is severe, acute shock, depression, and death may occur. Dogs may exhibit signs of abdominal pain by acting restless, panting, crying or wincing when picked up, shaking, standing with an arched back, or lying with the front end down and the rear end elevated. Numerous cases of pancreatitis are diagnosed following holidays, during which dogs often are given meat or fat scraps.

Complications of pancreatitis include shock, inflammation and fluid accumulation within the abdomen, breathing problems, heart arrhythmias, liver and kidney failure, and abnormal bleeding and clotting. Chronic recurrent pancreatitis, pancreatic abscesses, diabetes mellitus, and insufficiency of pancreatic enzyme secretion also may be caused by chronic pancreatitis. The presence of one or more of these problems worsens the dog's chance of recovery.

Laboratory tests sometimes reveal an elevated white blood cell count; however, an elevated white blood cell count may also be caused by many other diseases besides pancreatitis. The elevation of pancreatic enzymes (PLI, TLI) in the blood is probably the most helpful criteria in detecting pancreatic disease, but some dogs with pancreatitis will have normal enzyme levels early in disease. X-rays and ultrasound studies may show an area of inflammation in the location of the pancreas. X-rays may also help rule out other problems that can mimic the symptoms of pancreatitis, such as a foreign body in the stomach or small intestine. An abdominal ultrasound may be used to check for the presence of pancreatitis, a pancreatic abscess, a pancreatic tumor, or free fluid within the abdominal cavity. Certain dogs will require a surgical exploration of the abdomen for biopsy samples, or for treatment of abscesses or tumors.

Unfortunately, some dogs with pancreatitis will elude detection with any of these tests. Consequently, the diagnosis of pancreatitis may be tentative in some cases and based solely on clinical signs and medical history.

How is pancreatitis treated?

The successful management of pancreatitis will depend on early diagnosis and prompt medical therapy. The mild form of the disease is best treated by resting the pancreas from its role in digestion. This approach is accompanied by intravenous fluids to maintain normal fluid and electrolyte balance. Most dogs with pancreatitis are hospitalized for two to four days or longer, while intravenous fluids are administered and food is gradually re-introduced. The presence of systemic shock necessitates the immediate and aggressive use of intravenous fluids and shock medications. Pain medications are administered due to the intense pain pancreatitis often causes. Severe cases may need to be treated for 1-2 weeks or more.

Dogs that fail to respond to medical therapy may require surgery. Dogs with pancreatitis are considered to be at a higher risk for anesthetic and surgical complications, but they may have little chance of recovery without the operation. Typical conditions that require surgical intervention include pancreatic or bile duct obstruction, severe inflammation of the pancreas and abdominal cavity, and a pancreatic abscess, tumor or mass of some other type.

Will my dog recover?

The prognosis depends on the extent of the disease when presented and a favorable response to initial therapy. Dogs that present with shock and depression have a very guarded prognosis. Most of the mild forms of pancreatitis have a good prognosis.

Will there be any long-term problems?

There are three possible long-term complications that may follow severe or repeated pancreatitis. If a significant number of cells that produce digestive enzymes are destroyed, a lack of proper food digestion may follow. This is known as exocrine pancreatic insufficiency (EPI) and can be treated with daily administration of enzyme replacement. If a significant number of cells that produce insulin are destroyed, diabetes mellitus can result, which can be temporary or permanent. In rare cases, adhesions between the abdominal organs may occur as a consequence of pancreatitis. However, most dogs recover with no long-term effects.

Dogs who have had pancreatitis should not take certain medications which can cause attacks of pancreatitis in the future. Some of these medications to avoid include drugs for cancer and auto immune disease (L-asparaginase - Elspar® and azathioprine – Imuran®), drugs that prevent seizures (potassium bromide and levitiracetam – Keppra®), estrogens, corticosteroids (prednisone, dexamethasone, etc.), and the antibiotic trimethoprim-sulfa (SMZ®, Tribrissen®, Bactrim®, Primor®, etc.).

Overweight dogs should be placed on a diet for weight reduction, because obesity predisposes to pancreatitis. Even if your dog is not overweight, avoiding high fat foods is important, as these foods can predispose to more attacks of pancreatitis as well. If your dogs show signs of relapse in the future, prompt treatment is crucial, as dehydration can worsen pancreatitis and lead to complications that can worsen prognosis. Some dogs need to eat a high fiber, low fat diet for life, in order to prevent relapses.

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