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Hepatic Lipidosis

Fatty Liver Syndrome

Affected Animals:
Cats.

Overview:
Hepatic lipidosis commonly is called fatty liver syndrome because the cat's liver actually becomes filled with fat. A severe liver disease that can be fatal, hepatic lipidosis typically occurs when an obese cat suddenly stops eating, which causes a mobilization of its own fat stores and results in excessive fat accumulation in the cells of the liver. This excessive fat accumulation impairs the normal function of the liver cells, resulting in liver failure.

There are many reasons why obese cats stop eating. Often, stress will make an animal lose its appetite. Moving into a new home, having a new animal introduced into the household, or suffering an illness can cause a cat to lose interest in food. Because it is not always easy to predict what will make a cat feel stress, the best way to prevent hepatic lipidosis is to make sure the animal does not become obese in the first place. In addition, it is essential that a cat maintain a normal weight for good general health.

Clinical Signs:
Anorexia lasting a week or longer; icterus; weight loss; vomiting; loss of muscle mass; lethargy; and depression. Cats that develop hepatic lipidosis are typically middle-aged, indoor, obese, and have a history of enduring a stressful event such as the introduction of a new pet to the household, boarding, a move to a new environment, or a recent illness.

Symptoms:
Cats usually are taken to the veterinarian because they have not eaten for at least a week or more and they may be vomiting, depressed, and listless. Other symptoms include weight loss, decreased muscle mass, and a yellow color in the eyes, ears or mouth. This yellow color is called jaundice or icterus and it usually indicates liver disease, or less commonly destruction of the red blood cells. Cats that develop fatty liver syndrome tend to be obese indoor animals. They may have stopped eating because of a stressful event in the recent past, such as the introduction of a new pet to the house, being placed in a boarding facility, moving to a new environment, or suffering an illness.

Description:
Hepatic lipidosis, or fatty liver syndrome, is a very common and severe cause of liver disease in cats. It occurs most commonly in obese cats that stop eating for prolonged periods of a few days or more. Without adequate calorie intake, the body must mobilize fat stores to provide the energy necessary for the cells to function normally. The large fat molecules first are broken down into smaller components called triglycerides, which are

transported to the liver for processing. Once these triglycerides are packaged into usable forms by the liver, they are transported to all the cells in the body to provide fuel for cell functions.

In obese cats that are not eating, large amounts of triglycerides are transported to and taken up by the liver cells. Unfortunately, the uptake of triglycerides by the liver cells occurs more rapidly than the processing and repackaging. This results in a "log jam" in the process, and excessive amounts of the triglycerides build up within the cells, disrupting their normal functions. This disruption of normal liver function is termed liver failure.

One of the most important functions of the liver is its role as a "filter," which removes toxins and metabolizes drugs. Cats can develop severe neurological problems, such as hepatic encephalopathy, due to the buildup of these toxins in the blood. The normal liver also manufactures most of the clotting factors and carrier proteins in the body. With liver failure, bleeding disorders and edema can occur. If not reversed, liver failure is fatal. Early aggressive treatment is critical to reverse the mobilization of fat into the liver and to allow normal liver function to be restored.

Diagnosis:
A diagnosis of fatty liver syndrome is based on a history, physical examination, and blood tests that reveal liver disease. Usually, the history and exam will have revealed that the cat had been obese and then suddenly stopped eating. Cats with fatty liver syndrome often appear jaundiced, meaning that they have a yellowish color to their gums, skin, and the whites of their eyes.

A complete blood count, or CBC, is performed to rule out other causes of jaundice, such as abnormal destruction of the red blood cells, which results in severe anemia. A serum chemistry panel will show abnormalities in the liver enzymes, and may help to identify other concurrent diseases that may have caused or aggravated the cat's fatty liver syndrome.

The only way to diagnose hepatic lipidosis definitively is to examine a sample of the liver. This sample can be obtained using a needle while the cat is sedated mildly. The cells obtained are stained and examined under the microscope, a process called cytology. An even more accurate method is a liver biopsy, which is a larger sample of the liver that is obtained surgically or with an ultrasound-guided biopsy instrument. This is a more invasive procedure, and has a higher potential for complications. But, it is more accurate because of the larger sample of tissue obtained. Before a liver sample is taken, however, a clotting profile must be conducted to ensure that the cat does not bleed excessively from the procedure.

Prognosis:
Cats receiving early aggressive treatment have a fair prognosis for recovery, with survival rates of approximately 60 percent. Following recovery, surviving cats usually do not have residual problems, and recurrence is rare. Cats that do not receive adequate nutritional support have a very poor prognosis for survival. Cats that have underlying diseases such as cancer, pancreatitis, or inflammation of the pancreas have a much weaker chance of survival.

Transmission or Cause:
There are several diseases, as well as environmental stressors, that can lead to hepatic

lipidosis, or fatty liver syndrome. Examples of diseases that may lead to hepatic lipidosis include diabetes mellitus, hyperthyroidism, pancreatitis, cancer, and kidney disease. In general, though, fatty liver syndrome will result when an obese cat stops eating. Without adequate nutrition, the body's fat stores are mobilized to the liver, leading to excessive accumulation in the liver cells. This excessive accumulation causes a disruption in normal cellular functions, leading to liver failure. Although reasons and underlying diseases vary, any obese cat that stops eating for several days or more is at great risk for developing fatty liver syndrome.

Treatment:
The treatment for hepatic lipidosis requires providing the cat with adequate nutrition to reverse the deposition of fat into the liver. This nutritional support is critical, as is treating any underlying disease that may be contributing to the loss of appetite or otherwise aggravating the condition. With cats that have this illness, the best method of providing adequate nutrition is with the placement of a feeding tube. This allows the veterinarian and owner to feed a set amount of food several times a day.

Force-feeding is also an option; this involves using a syringe to squirt small amounts of food into the cat's mouth with the hope that it will be swallowed. However, cats often resist this method of being fed and refuse to the swallow food. Force feeding also increases the cat's stress level, making it less likely to resume its normal feeding habits.

Easily placed and well tolerated by cats, feeding tubes are not painful, have relatively few complications, and can be left in place for extended periods if needed. Once the cat is stable, an owner can be instructed on the use of the feeding tube and the cat will be able to leave the hospital, decreasing its stress level and reducing the cost of treatment. Most cats with hepatic lipidosis require nutritional support for four to six weeks; however, some will require longer periods of care.

Prevention:
Preventing obesity is the best way to prevent hepatic lipidosis. Obesity can be avoided by feeding consistent meals; free choice feeding should be avoided. Consult with a veterinarian about the cat's ideal weight and an appropriate diet. In households with multiple cats, it may be necessary to feed them separately if one cat is likely to eat another's food. Rapid weight loss must be avoided. If a cat is obese, a veterinarian can help institute a controlled weight loss program, which may involve the use of a prescription reducing diet. Cats that are ill or have been placed in a stressful situation should have their food intake monitored closely. If a cat stops eating for more than a day or two, a veterinarian should be consulted immediately.