

Idiopathic Hypercalcemia

Idiopathic hypercalcemia is sometimes suspected in cats with elevated blood calcium levels.

Cause

Calcium metabolism is controlled by the parathyroid glands in the neck. Idiopathic is a medical word that means the cause is unknown.

Clinical Signs

Cats with elevation in blood calcium will drink, and therefore urinate, excessively. If the problem is not addressed in a timely manner, patients can lose weight and become weak. Some patients present for difficulty urinating, because a bladder or kidney stone has developed due to the increased calcium in the urine. Because calcium is a highly regulated ion in the body and is involved in nerve conduction and muscle contraction, alterations in blood calcium are potentially life-threatening. Most of the time, the problem is caught before life-threatening problems occur when an elevation in blood calcium is noted on routine lab tests.

Excess calcium in the blood means that calcium is not being delivered into the tissues where it is needed for normal muscle contractions and nerve conduction. Additionally, excess calcium in the blood must be excreted by the kidneys and this puts a significant amount of stress on the kidneys. Eventually, calcium stones form in the urinary bladder and kidneys and the kidneys begin to fail. How quickly this will happen is difficult to predict, but hypercalcemia is considered a life-threatening condition if left untreated.

Diagnosis

A medical workup to determine the cause of the elevated calcium is always recommended, so appropriate therapy can begin. When testing does not reveal any underlying cause for hypercalcemia, then idiopathic hypercalcemia is the default diagnosis.

Patients with suspected idiopathic hypercalcemia will need to have a medical workup to make sure the elevation in calcium is not due to another health condition. This generally involves blood tests to look for organ function that could predispose to hypercalcemia. Imaging studies such as radiographs (X-rays) and ultrasound will be done because the elevation in blood calcium is commonly associated with certain tumors. Blood tests will also include a measurement of ionized calcium level and may include a parathyroid hormone assay. This testing is recommended when no tumors or organ dysfunction is found on a medical workup. The tests for ionized calcium, parathyroid hormone, and parathyroid hormone-related paraprotein are sent to an endocrine research lab at Michigan State University. Results generally take 7-10 days.

Treatment

When all tests are negative, the patient is declared to have idiopathic hypercalcemia, and therapy to manage calcium is recommended. Idiopathic hypercalcemia is sometimes treated with low dose steroids. This medication helps promote calcium excretion from the body. The calcium is monitored during therapy and the lowest dose possible is used to reduce the likelihood of long term side effects. This is not the most sophisticated way to treat idiopathic hypercalcemia; because of medication side effects, the internal medicine specialists at Veterinary Specialty Center generally recommend using bisphosphonate medications. These medications were developed to treat osteoporosis in humans and act to drive calcium into the bone stores. These medications can have some potential side effects as well, so careful dosing and monitoring is recommended.

Some cats develop bladder and kidney stones as a result of chronically elevated calcium, requiring surgical intervention to remove the stones. Kidney stones that travel into the ureter, obstructing the path of urine from

the kidney to bladder, are particularly challenging to treat. Some of these patients must have a bypass surgically implanted to allow normal flow. Many cats have been saved by the placement of these bypass devices.

Prognosis

Idiopathic hypercalcemia is a treatable disease although patients require lifelong therapy and monitoring. Cats with idiopathic hypercalcemia that are diagnosed before evidence of organ damage occur generally enjoy a normal quality of life and survival. Cats that develop bladder or kidney stones or have lost significant kidney function have a more guarded prognosis for long term survival, but can often be managed over time to optimize the quality of life.

Long Term Follow-Up

Patients with hypercalcemia from any cause are generally diagnosed and treated by the internal medicine specialists at Veterinary Specialty Center. Cats with uncomplicated hypercalcemia generally follow up every few months or monitoring and adjustment to oral therapy. Cats with complications of their hypercalcemia, such as bladder or kidney stones or damage, may need more frequent follow-up, particularly if a surgical procedure was necessary. Because decisions about changes in medication are based on observations made during the physical exam in addition to other testing, our recommendation is that follow up for this disease be done at Veterinary Specialty Center if your primary care veterinarian wants continued input from the internist about case management. All routine preventive care should continue with your primary care veterinarian.